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Higher Education
Commission

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Commission de
l'enseignement supérieur
des Provinces maritimes

Faculty Recruitment and Retention in the Maritimes

The Council of Maritime Premiers

Le Conseil des premiers ministres des Maritimes

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Foreword

The Maritime Provinces Higher Education Commission identified faculty recruitment and retention as a very important issue facing Maritime universities. In fall 2001, the Commission asked the AAU-MPHEC Advisory Committee on Information and Analysis to prepare an analysis of the situation in the Maritimes.

On behalf of the Commission, we would like to thank the members of the AAU-MPHEC Advisory Committee on Information and Analysis for their efforts, as well as Dr. Dawn Gordon, MPHEC staff member, for conducting the research leading up to this report. Members of the Committee included:

Ms. Louise Boudreau-Gillis, Department of Education, New Brunswick
Dr. Susan Clark, Nova Scotia Advisory Board on Colleges and Universities
Mr. Mark Frison, MPHEC member, Sydney, Nova Scotia
Dr. Jeanne Lofstedt, University of Prince Edward Island, Prince Edward Island
Dr. Averlyn Pedro, University of New Brunswick, New Brunswick
Dr. Sam Scullly, Dalhousie University, Nova Scotia (Committee Chair)

The aim of this report is to situate the issue in the Maritime context through analysis of regional data, questionnaire responses and a literature review. While much of the work required to address the issue will have to be undertaken at the institutional level, policies developed at the provincial or regional level would greatly enhance the efforts at the institutional level. To that end, the MPHEC will host in fall 2002 a symposium on faculty recruitment and retention. The purpose of the symposium is to facilitate the generation of policies and/or strategies to address faculty recruitment and retention issues.

We encourage the reader to review this report and forward any comments to the MPHEC.

Bernie MacDonald
Chair

Mireille Duguay
Chief Executive Officer

EXECUTIVE SUMMARY

It is widely reported in the literature and the media that universities across Canada and in the United States are facing a climate of intense hiring competition for top faculty as a result of a wave of retirements expected to occur over the next ten years. Compounding this issue in some regions are increasing enrolments, and a predicted rise in participation rates. In 1999, the AUCC estimated that 32,000 faculty would have to be hired across the country over the next ten years, while it is predicted that each year, about 1,400 Ph.D.s will take up faculty positions.

This has raised the question about whether universities in the Maritime region are experiencing the same pressures, or whether they are experiencing them to the same degree as their counterparts in Ontario and Western Canada. There are 16 degree-granting institutions within the Maritime Provinces Higher Education Commission's mandate. They range in size from full-time undergraduate enrolment numbers of 88 to 8,348. Most are primarily undergraduate; two (University of New Brunswick and Dalhousie University) offer a wide range of Ph.D. or doctoral level programmes, while three more (Acadia University, Saint Mary's University and Université de Moncton) offer one or a few specialized programmes at this level. This variety of institutional sizes, mandates and specializations inevitably results in different experiences, perceptions and opinions with regard to the issue of faculty recruitment and retention.

For institutions in this region to be prepared to meet the challenges of the coming decade, data on hiring needs and supply of new faculty over the next decade, and information on issues surrounding the recruitment and retention of faculty, needed to be analysed and placed in a regional context.

This report provides a comprehensive profile of full-time faculty, part-time staff and Ph.D. graduates with estimates of hiring needs and supply. In addition, it summarizes faculty recruitment and retention issues and best practices. A short questionnaire was distributed to institutions and faculty associations in the region in order to gather primary data and to determine their perceptions and opinions on this issue. Their responses were integrated with information obtained from a review of the literature.

It is not the aim of this report to provide detailed recommendations; excellent examples of recommendations tailored to the needs of specific institutions may be found in Carleton University's Report of the Task Force on Faculty Recruitment and Retention (2000), and the University of Calgary's Report of the Task Force on the Recruitment and Retention of Academic Staff (2000). Rather, the aim is to place this issue in the Maritime context through analysis of regional data, questionnaire responses and a literature review. This paper provides background and can inform discussions between institutions, faculty and governments in the formulation of regional and/or provincial policies targeting this issue.

HIGHLIGHTS

Secondary data analysis

Full-time faculty - Demographics and estimated need

- Twenty-seven percent of all Maritime full-time faculty are at least 55 years old (1999-2000).
- In the last decade, the overall regional student full-time equivalent (FTE) to full-time faculty

ratio has increased by two (from 14 to 1 in 1990-1991 to 16 to 1 in 1999-2000).
- It is estimated that approximately 1,452, (45%) current full-time faculty in Maritime universities will remain in their current (1999-2000) employment position by the end of the decade.
- An estimated 1,809 full-time positions will have to be filled within Maritime universities over the next decade, or about 181 per year.

Part-time academic staff - Trends

- Between 1990-1991 and 1997-1998, the number of full-time faculty declined by 7.2%; over this same interval, the number of part-time teaching contracts increased by 39%.
- In 1997-1998, 70% of full-time faculty had a Ph.D., compared to 33% of their part-time counterparts.
- The number of part-time teaching contracts awarded to women has consistently been greater than the number of women employed full-time.
- The number of full-time male faculty is greater than the number of part-time teaching contracts awarded to men, but the gap is shrinking.

Ph.D. graduates - Trends and estimated supply

- Based on an annual regional Ph.D. graduation rate of 120, it is estimated that 42 will enter academic careers.
- About 23% of the estimated number of faculty positions (181 per year) could potentially be filled by graduates who studied in the Maritime region.
- At least three quarters of the positions will have to be filled by graduates who studied outside the region.

Factors involved in faculty recruitment and retention

- For the most part, the survey of Maritime institutions did not uncover factors unique to an institution or to the region that have not already been experienced elsewhere in Canada.
- Faculty associations expressed agreement that faculty recruitment and retention was a crucial issue for their membership.
- Generally, the intense competition for top faculty across the rest of Canada is not yet being felt to the same extent in the primarily undergraduate institutions here, with the exception of certain disciplines (Veterinary Medicine, Information Systems/Computer Science, Engineering, and Nursing).
- The region's two largest universities, University of New Brunswick and Dalhousie University, can be said to be in more direct competition with similar institutions across Canada. The smaller institutions may not feel the effects of increased competition as soon, or to the same degree.

The research clearly demonstrates that the profile of university teachers (both full-time faculty and part-time staff) in this region demands the attention of stakeholders. The predicted number of retirements and losses through attrition, and the estimated shortfall in the number of new Ph.D.s to fill these positions, poses two potential problems: one, unfilled vacancies which threaten the very offering of programmes and classes, and two, the hiring of less qualified instructors which could endanger programme quality.

It is clear that much of the work will have to be undertaken at the institutional level. The creation of specific strategies and guidelines to enhance recruitment and retention efforts will be influenced to a great degree by institutional size, focus and

mandate. However, these efforts should not take place in a vacuum.

Policies targeted at faculty recruitment and retention at the provincial or regional level would enhance the efforts of individual institutions and increase the competitive abilities of the region as a whole. The generation of such policies might best occur through a free discussion of this topic among institutions, faculty, and governments.

From a public policy perspective, it is clear that the Maritime universities alone cannot solve this issue. Many of the possible interventions will require additional resources, as well as policies, from provincial governments. The other potential danger is that the Maritime provinces may well be specifically identified by other jurisdictions as a fertile ground from which to recruit faculty members, in the absence of a strategy to recruit and retain them. The participation of governments in such discussions will likely be encouraged if they are confident that the universities would use such new resources for the intended purpose. In addition, it is important that policies created to target this issue are not developed in isolation from the other factors that are affecting our universities and the post-secondary sector in general.

1. INTRODUCTION

Full-time faculty hiring patterns over the last 40 years have resulted in a demographic wave that has begun to break, resulting in large numbers of faculty retirements (AUCC, 1999). Within a decade, most of the bulge should have moved completely through the career cycle (Elliot, 2000). Based on the mean age of faculty (49) in 1999 as reported by the Association of Universities and Community Colleges (1999), we can assume that this has increased to 51 in 2001. Further, in 1999, 29% of faculty were 55 or older; this percentage has almost certainly increased over the last two years. In addition, in the last few years, universities have replaced only half the faculty who left academe (4,000 faculty cut in past five years; Giroux, 1999).

It has been estimated that, between 1999 and 2010, 32,000 faculty will need to be hired across Canada to cope with retirements and projected enrolment increases. Furthermore, the consensus in the literature is that the supply of recent Ph.D.s is not enough to fill the spectrum of ranks. It has been estimated (Fontaine and Mills, 2001) that 4,129 Canadian doctoral graduates will be expected to start academic careers[1] in that time, or just under 400 per year. This estimate is conservative compared to the AUCC's prediction (Giroux, 1999) of 4,000 new doctoral graduates per year, with 1,400 per year entering into academe. In a climate of intense hiring competition across Canada and the United States, universities also must strive to retain existing faculty against a growing number of generous offers from elsewhere, from universities in the same situation. Compounding this situation are years of government funding cutbacks, as well as increasing student enrolments. The AUCC projects a 20% increase in enrolments across Canada by 2010, with the strongest growth in Ontario, Alberta and British Columbia (Elliot, 2000). It should be noted, however, that in the Atlantic provinces, gains are expected to occur only in Nova Scotia.

To cope with the effects of the expected increase in hiring demand for full-time faculty, many institutions across the country have studied the problem to attempt to formulate the best strategy for recruiting and retaining faculty. Some have struck task forces (University of Northern British Columbia, 2001, Carleton University, 2000, University of Calgary, 2000 and Simon Fraser University, 1999) and others have pooled resources to study the issue as a regional problem (British Columbia - The Laurier Institution, 2000; Council of Ontario Universities - Smith, 2000). Many have surveyed faculty members (incumbents and leavers), deans, and top level administrators to determine reasons why faculty members leave and what factors encourage them to stay. Some have attempted to determine reasons why candidates accept or reject an offer of employment. Under Appendix 1, the reader will find summaries of methodological approaches used across Canada. In the Maritimes, both the Université de Moncton (2001) and the Acadia University Faculty Association (2002) have produced studies on the issue.

Beyond these two organizations, the issue in the Maritime region has gone largely unexplored, and little region-specific information and data is available to help institutions here to properly assess their situation relative to each other and the rest of the country. The AAU-MPHEC Advisory Committee on Information and Analysis was charged with examining the situation in the Maritimes. This report presents an analysis of available data and relevant literature. It explores the experiences of Maritime institutions with regard to faculty recruitment and retention as they compare to other regions in Canada. Where appropriate, options and best practices are provided.

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[1] Total (1999-2010) estimated number of Canadian doctoral graduates aged 34 years old and less who may become full-time university teachers (Fontaine and Mills, 2001).

It is not the aim of this report to provide detailed recommendations; excellent examples of recommendations tailored to the needs of specific institutions may be found in Carleton University's Report of the Task Force on Faculty Recruitment and Retention (2000), and the University of Calgary's Report of the Task Force on the Recruitment and Retention of Academic Staff (2000). Rather, the aim is to place this issue in the Maritime context through analysis of regional data, questionnaire responses and a literature review. This paper provides background and can inform discussions between institutions, faculty and governments in the formulation of regional and/or provincial policies targeting this issue.

Methodology

Questionnaire

In early October 2001, an information letter and short questionnaire (Appendix 2) was sent to all institutional heads, and presidents of faculty associations or equivalent, on the MPHEC's schedule. No deadline for reply was set. Respondents were invited to reply in writing, or more informally, by phone. Where necessary, written responses were followed up by phone by MPHEC staff.

Of the institutional responses, 15 written responses were received, four of which were followed up with phone conversations for more information or clarification. Two institutions chose to respond solely by phone.

At the time of writing, eight responses (two phone and six written) had been received from faculty associations.

Data sources

University and College Academic Staff Survey (UCASS) - Full-time (Statistics Canada): this survey captures information about full-time academic staff. The most recent year available for this data is 1999-2000. Only data elements normally held by the MPHEC were analysed.

University and College Academic Staff Survey (UCASS) - Part-time (Statistics Canada): this survey captures data on part-time teaching staff employed in degree-granting institutions. At the time of writing, the most recent year available was 1997-1998; Statistics Canada cited difficulties in obtaining/processing data from Québec as a reason for delays in data release. Due to confidentiality/privacy issues, data for the Maritimes could be obtained only as an aggregate.

University Student Information System (USIS)/Enhanced Student Information System (ESIS) (Statistics Canada): enrolment data (Ph.D.s) is available up to 2000-2001; data on graduates is currently available up to 1997-1998.

Note: Both Holland College and the Maritime Forest Ranger School were invited to respond to the Questionnaire as institutions included on the MPHEC's schedule. Individual responses from these institutions may be found under Appendix 3. However, because the Commission's data subset of Statistics Canada's UCASS does not include data from these institutions, they were not included in the secondary data analysis section.

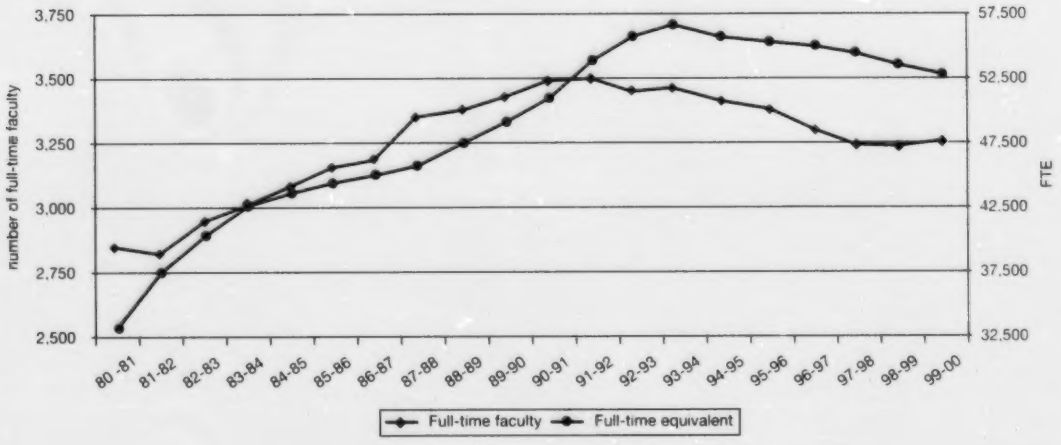
2. SECONDARY DATA ANALYSIS

2.1 Full-time faculty - Demographics

In 1999-2000, there were 3,261 full-time faculty in the Maritimes, representing 10.4% of the total number in Canada (33,665).

Between 1981-1982 and 1991-1992, the Maritime region enjoyed a steady increase in the number of full-time faculty (Figure 1). Over this interval, their number increased by 650 (from 2,844 to 3,494), or 23%. From 1993-1994 to 1998-1999, however, the total number of full-time faculty declined by 217, or 6.3%. This decline is likely primarily the result of early retirement packages offered by institutions to cope with cuts in government funding during that same period.

Figure 1
Number of full-time faculty, and full-time equivalent (FTE) of full-time and part-time enrolments in Maritime institutions, 1980-1981 to 1999-2000



The trend in the number of full-time faculty has generally followed student enrolment trends,[2] with the exception of 1988-1989 to 1993-1994 when faculty numbers remained relatively static while enrolments continued to increase.

What is more telling for future trends in the number of full-time faculty, however, is the age profile of current full-time faculty. Table 1 presents the proportion of faculty, by institution, who are at least 55 years old. Assuming a retirement age of 65, we can expect this group of faculty to leave within ten years. The relative size of this age group varies significantly among the institutions.

[2] The reader should note that throughout the text, students, student enrolment, and FTE enrolment are defined as the full-time equivalent (FTE) of full-time and part-time enrolments.

Table 1
Percent of full-time faculty who are at least 55 years old, by institution, 1999-2000

(Rankings are based on order of highest to lowest percentages)

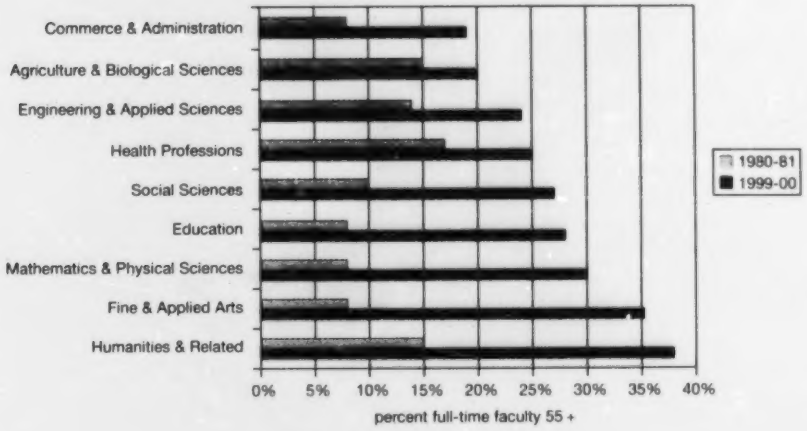
Institution	Total number of full-time faculty	Percent of full-time faculty who are at least 55 years old	Rank
Atlantic School of Theology	9	77.7	1
St. Thomas University	76	35.5	2
Nova Scotia College of Art and Design	43	34.9	3
University College of Cape Breton	101	34.6	4
Saint Mary's University	211	32.2	5
Acadia University	205	29.8	6
St. Francis Xavier University	199	29.6	7
Dalhousie University	940	28.6	8
Mount Saint Vincent University	134	28.3	9
Mount Allison University	124	28.2	10
Université Sainte-Anne	32	28.1	11
[redacted]			
University of King's College	26	26.9	12
University of New Brunswick	539	24.3	13
Université de Moncton	364	22.2	14
University of Prince Edward Island	189	19.5	15
Nova Scotia Agricultural College	61	18.0	16

For example, 35.5% of the full-time faculty at St. Thomas University are at least 55 years old, while just 18% of the full-time faculty at Nova Scotia Agricultural College are in this age group. Demographic data for individual institutions may be found in Appendix 4.

Looking at the Maritimes as a whole, we see a large difference in the percent of full-time faculty who are 55 years and older by field of study (Figure 2). In 1999-2000, the percentage of faculty in this age category was under 20% for Commerce and Administration and Agriculture & Biological Science. By contrast, 35% or more of the full-time faculty in Fine & Applied Arts and in Humanities & Related were at least 55 years old. These findings are similar to that reported by the AUCC (1999), where "faculties such as the Biological Sciences, Engineering, the Health Professions, Commerce and Computer Science were able to replace relatively more professors."

The differences across the fields reflect growth and hiring patterns across the decades, with for example, Commerce & Administration experiencing more recent growth.

Figure 2
Percent of Maritime full-time faculty who are at least 55 years old, by field of subject taught, 1980-1981 and 1999-2000



The full impact of the decline in numbers and age profile of full-time faculty can be seen more easily in relationship to the trend in student enrolment. Figure 3 shows the trends in enrolment in the Maritimes. In 1980-1981, FTE enrolment was 33,046.4. By 1999-2000, this number had increased 48% to 52,089.9.

Figure 3
Full-time equivalent (FTE) of full-time and part-time enrolments in the Maritimes, 1980-1881, 1990-1991, and 1999-2000

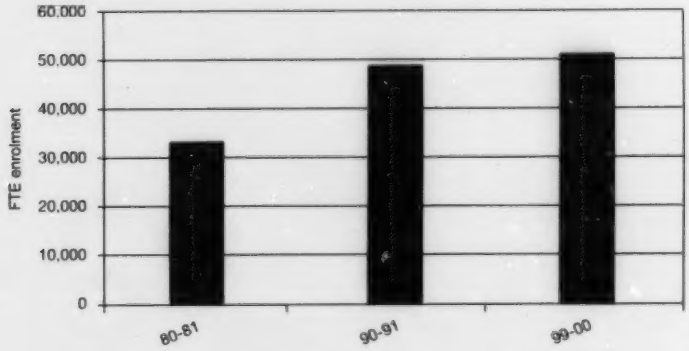
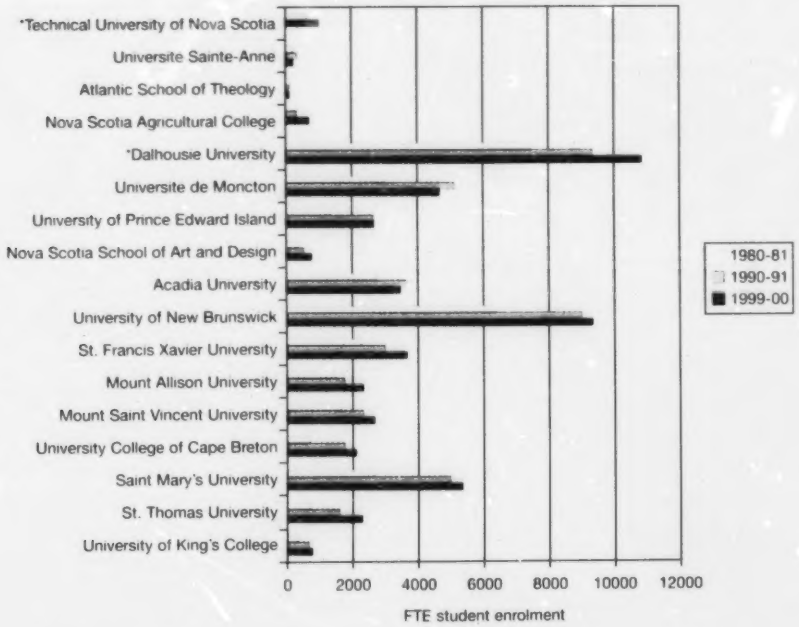


Figure 4 illustrates the enrolment trend, by institution, at three points in time.

Figure 4
Full-time equivalent (FTE) of full-time and part-time enrolments, by institutions 1980-1981, 1990-1991, and 1999-2000



*Dalhousie University and the Technical University of Nova Scotia merged in 1997.

Looking at student-to-faculty ratios (Figure 5), we see an increase in this ratio for the Maritimes as a whole between 1980-1981 and 1999-2000. In the last decade alone, this ratio has increased by nearly two FTE per full-time faculty member (from 14 to 1 in 1990-1991 to 16 to 1 in 1999-2000).

Compared to student/teacher ratios in the public (K-12) school system, a full-time faculty student ratio of 16 may still seem low. However, the reader should be aware that full-time faculty have other responsibilities such as research and community service that demand comparable amounts of time as does their teaching role.

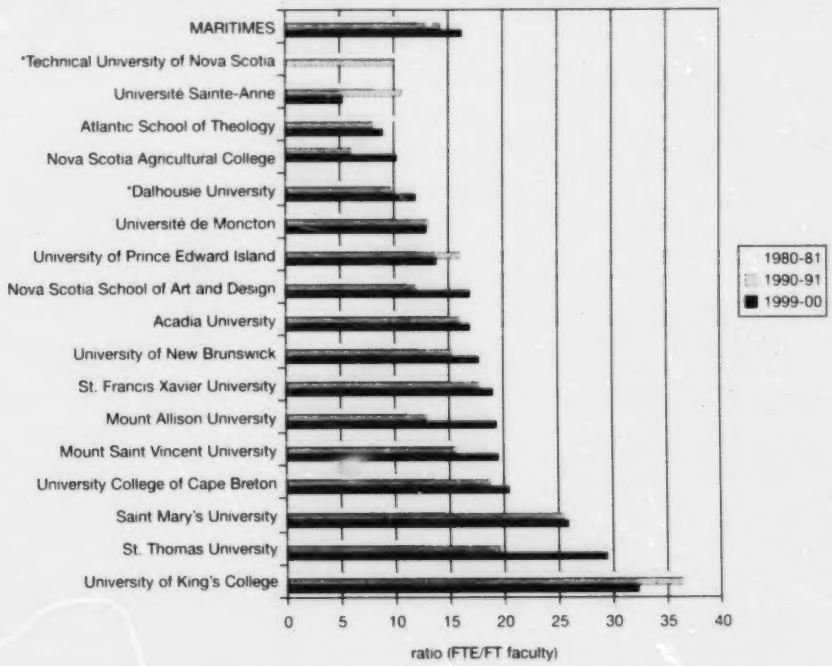
Figure 5 also shows the distribution of this ratio by institution; perhaps not surprisingly, we find that certain institutions have higher ratios than others. For example, University of King's College, ranking 16th, has the highest ratio, with University College of Cape Breton, Saint Mary's University, and St. Thomas University ranking 13th, 14th, and 15th respectively (Technical University of Nova Scotia is not included in the rankings).

The student/faculty ratio does not tell the whole story; increases or decreases in this measure may be the result of changes in enrolment that have not kept pace with changes in faculty numbers due to hiring and/or retirements. For example, Saint Mary's and St. Thomas' increase in the student to faculty

ratio was due in part to increasing enrolments. At the same time, Dalhousie's ratio increased only slightly relative to large enrolment increases, and University of Prince Edward Island's ratio decreased while enrolments stayed the same.

A comparison of figures 4 and 5 seems to indicate that institutions in the Maritimes are approaching the issue in different ways; perhaps some with higher ratios employ greater numbers of part-time staff to accommodate short-term increases in enrolment, or to cope with retirements in the short term.

Figure 5
Full-time equivalent (FTE) of full-time and part-time enrolments to faculty (full-time) ratio, by institution, 1980-1981, 1990-1991, and 1999-2000



*Dalhousie University and the Technical University of Nova Scotia merged in 1997.

2.2 Full-time faculty - Estimated need

Fontaine and Mills (2001) estimated the number of full-time Canadian university professors remaining in 2018, accounting for retirements at age 65 and an estimated annual rate of attrition of 4%. In 2002, 23,705 professors will remain; by 2018, 8,871 of this original number will remain.

On average, 27% of all Maritime university full-time faculty are at least 55 years old, or 890 out of 3,261. Assuming all of them reach the end of their career cycle within 10 years, 2,371 (73%) of the original total number are estimated to remain in 2010 (based on 1999-2000 numbers). However, taking Fontaine and Mills' (2001) estimation of an attrition rate of 4% per year, a further 919 faculty are lost from the current complement (Table 2).

Table 2
Estimated number of faculty remaining in Maritime institutions, 1999-2000 to 2008-2009

Year	Faculty remaining	Estimated loss due to retirement: -89/year (number remaining)	Estimated loss due to attrition -4%/year (number remaining)
1999-2000	3,261	3,172	3,045
2000-2001	3,045	2,956	2,838
2001-2002	2,838	2,749	2,639
2002-2003	2,639	2,550	2,448
2003-2004	2,448	2,359	2,265
2004-2005	2,265	2,176	2,089
2005-2006	2,089	2,000	1,920
2006-2007	1,920	1,831	1,758
2007-2008	1,758	1,669	1,602
2008-2009	1,602	1,513	1,452

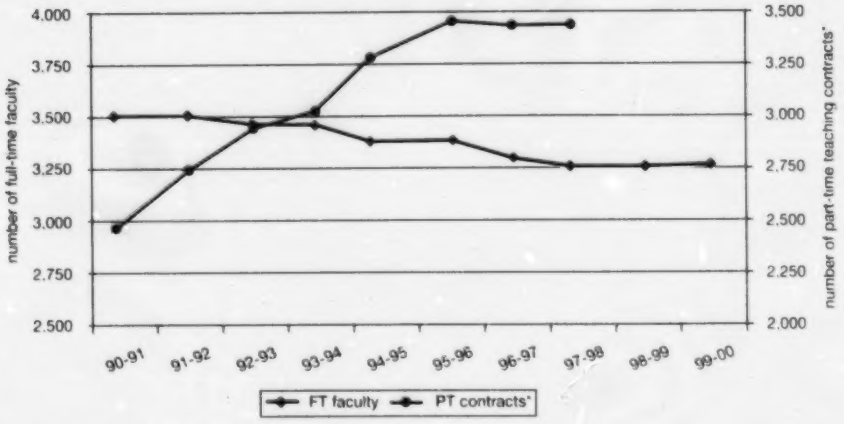
By 2009-2010, therefore, we can estimate that 1,452, or 45% of all current full-time faculty will remain in their current employment position (Table 2). Not accounting for faculty that went unreplaced over the last few years (Smith 2000), this leaves about 1,809 full-time positions that will have to be filled within Maritime universities over the next decade, or about 181 per year.

The next section will present data on part-time staff (Survey of Part-time University Teaching Staff - Statistics Canada) which is available for the Maritimes only in a regional level aggregation.

2.3 Part-time academic staff - Trends

Analysis of the data suggests that institutions in the region are compensating for the loss of their full-time faculty in part with increased use of staff hired on part-time contracts. Furthermore, it appears that this practice is on the rise. Between 1990-1991 and 1997-1998, the number of full-time faculty has declined by 7.2%; over this same interval, the number of part-time teaching contracts awarded has increased by 39% (Figure 6). In 1998, 45% of all teaching staff across Canada were working on a part-time basis (Mullens, 2001). These statistics are somewhat different than trends in the United States, where it is estimated that in the same year, just 40% of academic staff are tenured, and the rest are part-time or on short-term contracts (Mullens, 2001).

Figure 6
Number of full-time faculty and part-time teaching contracts in Maritime institutions, 1990-1991 to 1999-2000



*data unavailable for 1998-1999 and 1999-2000

It is important to note that the comparison of the number of full-time faculty and part-time teaching contracts must take into account the fact that some contracts may stipulate teaching a single half-credit course or a couple of courses, whereas full-time faculty can carry a teaching load of three or more full credits. That is, to replace the teaching function of one full-time faculty member, it is likely that in many cases, more than one contract would have to be awarded.[3]

Decreases in full-time faculty have important implications for retention. The estimated average work week of full-time faculty is already high: Smith (2000) reports this figure to be 50-60 hours per week. Because of the increasing use of contracts, the workload for full-time faculty is likely to increase due to the fact that part-time staff have no obligations in administrative duties, student advising or community service.

Not only are part-time staff free of these obligations, but as we will see in Figures 7a and 7b, they are, as a group, less academically qualified (*i.e.*, defined by highest earned degree) than their full-time counterparts. It should be noted that no automatic correlation between quality of instruction and highest earned degree is assumed; many part-time staff may offer a wealth of applied knowledge from their primary employment. In addition, certain programmes require practitioners (*i.e.* with professional degree or designation) to instruct courses.

In 1997-1998 (the most recent year for which part-time staff data is available), 70% of full-time faculty had a Ph.D. (Figure 7a), compared to 33% of their part-time counterparts (Figure 7b). Further, while the distribution of part-time teaching contracts awarded by highest earned degree had remained relatively static from 1990-1991 to 1997-1998, the proportion of full-time faculty holding a Ph.D. increased by 11 percentage points (from 59% to 70%) over the same interval.

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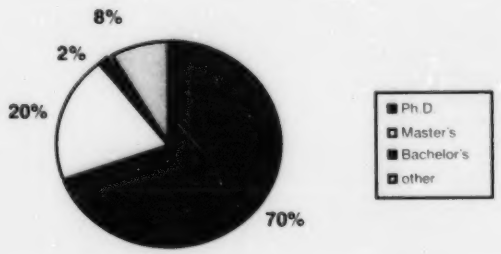
[3] The analysis of data on part-time staff is based on the number of contracts. Part-time staff are defined to include a) staff appointed on a full-time basis whose term of appointment is less than 12 months; b) staff appointed on a part-time basis (fractional load); c) overload appointment of an individual reported on the full-time survey. According to Statistics Canada, in 1997-1998, 85% of part-time staff across Canada taught, on average, up to one course equivalent.

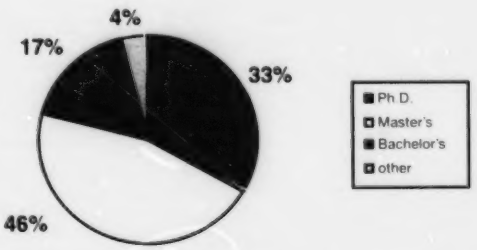
The proportion of part-time teaching contracts awarded to those whose highest earned degree is at the Bachelor's level was 17% in 1997-1998. To place this figure in context, it should be noted that graduate teaching assistants, markers, demonstrators and lab assistants are excluded from the part-time staff survey.

Figure 7a
Highest earned degree of full-time faculty at Maritime institutions, 1997-1998



n=3229 (does not include highest degree not reported: n=7)

Figure 7b
Distribution of part-time teaching contracts by highest earned degree at Maritime institutions, 1997-1998

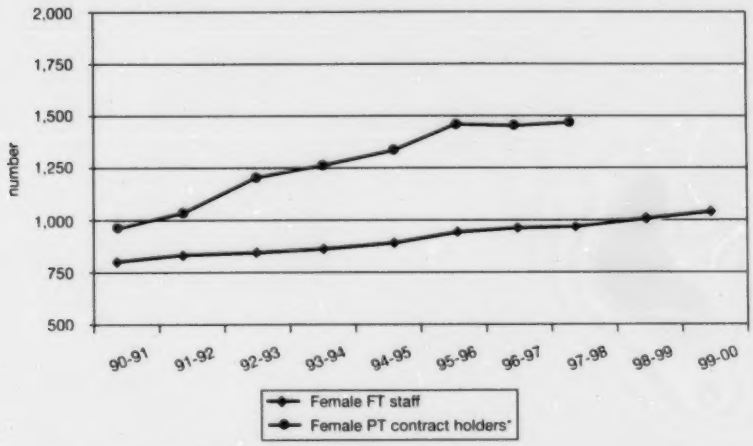


n=2936 (does not include highest degree not reported: n=497)

Part-time female staff are less likely to hold a Ph.D. than their male counterparts. In 1997-1998, nearly equal proportions of men holding a part-time teaching contract had a Ph.D. (41%) or a Master's degree (42%), while 21% of women held a Ph.D. (53% held a Master's degree). A breakdown of highest earned degree by field of study for part-time staff is not available.

Further examination of the data shows a striking difference in the gender distribution between full-time faculty and part-time teaching contract holders. From 1990-1991 to 1997-1998, the number of part-time teaching contracts awarded to women has consistently been greater than the number of women employed full-time, and furthermore, that gap has grown, from six part-time contracts for every five full-time faculty in 1990-1991, to six part-time to every four full-time in 1997-1998 (Figure 8a). The reason for greater numbers of women in part-time positions may be due, in part, to personal choice. According to Mullens (2001), "...women who chose part-time work did so because it had more flexibility and suited their personal circumstances."

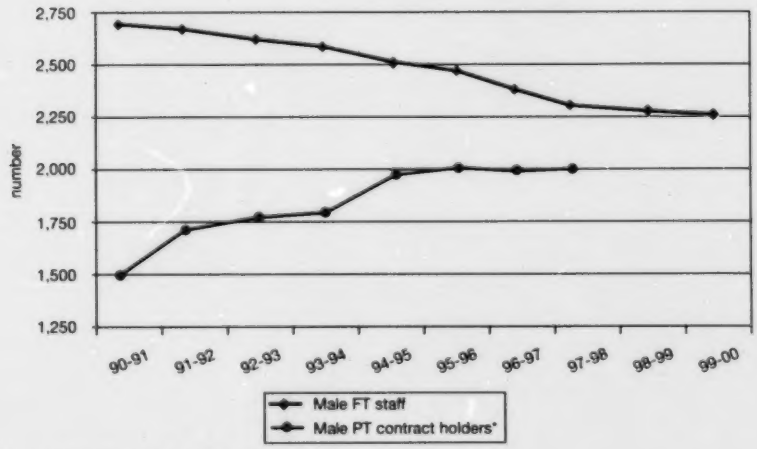
Figure 8a
Number of female full-time faculty and female part-time teaching contract holders in Maritime institutions, 1990-1991 to 1999-2000



*data unavailable for 1998-1999 and 1999-2000

The number of male full-time faculty is greater than the number of part-time teaching contracts awarded to men, but the gap is shrinking (Figure 8b). In recent years, the narrowing of this gap is due to the continuing decline of full-time numbers, while the number of men employed on part-time teaching contracts has levelled off. This situation must continue to be monitored as soon as more recent data become available.The distribution of Maritime part-time teaching contracts by gender was 58% male and 42% female in 1997-1998; this distribution is the same as that found at the national level. Furthermore, for the period 1990-1991 to 1997-1998, the gender distribution among Maritime part-time teaching contract holders has closely matched that of Canada as a whole.

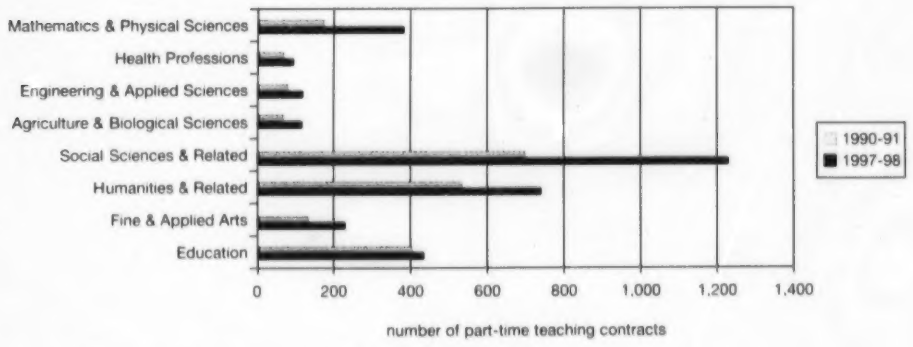
Figure 8b
Number of male full-time faculty and male part-time teaching contract holders in Maritime institutions, 1990-1991 to 1999-2000



*data unavailable for 1998-1999 and 1999-2000

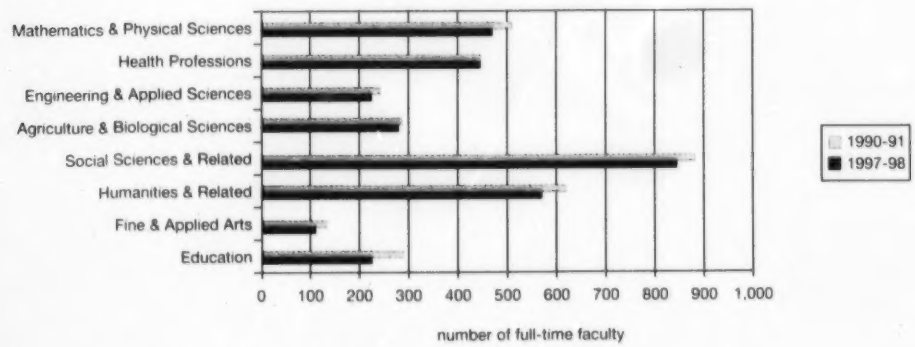
Looking at the Maritimes as a whole, we see that part-time teaching contracts are more frequently utilized in certain fields of study than in others, and this roughly corresponds to the number of full-time faculty teaching in each field (Figures 9a and 9b).

Figure 9a
Number of part-time teaching contracts in Maritime institutions, by field of subject taught, 1990-1991 and 1997-1998



Note: Social Sciences & Related includes Commerce & Administration

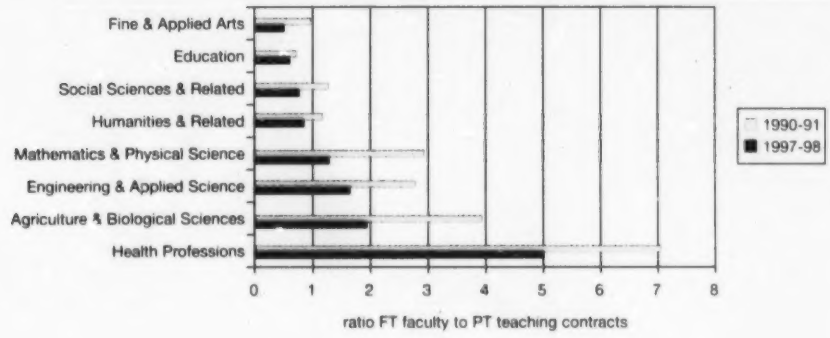
Figure 9b
Number of full-time faculty at Maritime institutions, by field of subject taught, 1990-1991 and 1997-1998



Note: Social Sciences & Related includes Commerce & Administration

Looking at the ratio of full-time faculty to part-time teaching contracts (Figure 10), we see a decline between 1990-1991 and 1997-1998 in all fields. While Fine & Applied Arts, Education, Social Sciences and the Humanities have had consistently low full- to part-time ratios, Agriculture & Biological Science, Engineering & Applied Science and Mathematics & Physical Science, which had higher ratios at the beginning of the last decade, lost significant ground in the subsequent years (Figure 10). Even the Health Professions, which had the highest full- to part-time ratio (7.08) in 1990-1991, declined to just under 5.0 by 1997-1998.

Figure 10
Ratio of full-time faculty to part-time teaching contracts at Maritime institutions, by field of subject taught, 1990-1991 and 1997-1998



Because more recent data are not available, it is difficult to determine with certainty whether these trends have continued into the new millennium. Even an estimate that projects no change in these statistics still presents a problem for Maritime universities, as an increase in the number of part-time teaching contracts may not be ideal at a time when retention considerations are increasingly important.

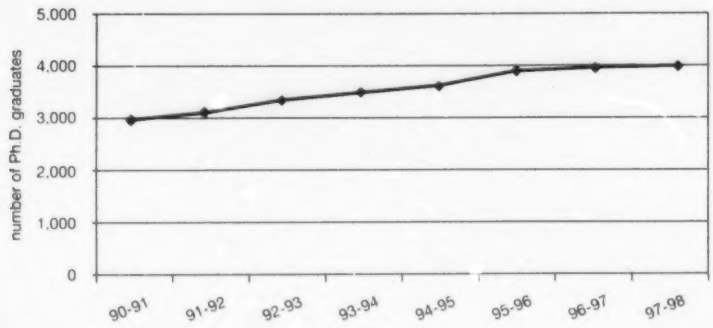
> "The casualization of the professor is a huge problem and is contributing to the erosion of the whole collegial approach to higher education...Part-time staff are not required to do research and are not involved in the administrative functioning of the department; as their relative numbers increase, the tenured staff and university have a smaller group of individuals carrying the weight of administration, curriculum development and other duties at a university" (Mullens, 2001).

2.4 Ph.D. graduates - Trends

"The normal prerequisite for filling a faculty position is that candidates must have earned a doctoral degree...This suggests that the primary labour pool for university recruitment consists of recent graduates" (OCUFA , 2001). Detailed discussions on constraints of supply may be found in Shapiro (2001) and OCUFA (2001).

Where will new candidates come from? Across Canada, it is estimated that new doctoral degree recipients will graduate at the rate of 4,000 per year. Figure 11 illustrates the trend in the number of Ph.D. graduates in Canada between 1990-1991 and 1997-1998. However, not all of them will be attracted to jobs in academe, with significant numbers taking up positions in government or with private employers (Elliot, 2000). While Giroux (1999) predicts about 1,400 of these new graduates will join universities each year, Fontaine and Mills (2001) predicted a much more conservative number, just under 400 per year. Giroux's (1999) estimate is based on the historical trend that between 30 and 40% of doctoral degree recipients take up academic positions. Given the predicted Ph.D. graduation rate of 4,000 per year, between 1,200 and 1,600 can be expected to enter academic positions.

Figure 11
Number of Ph.D. graduates across Canada, 1990-1991 to 1997-1998

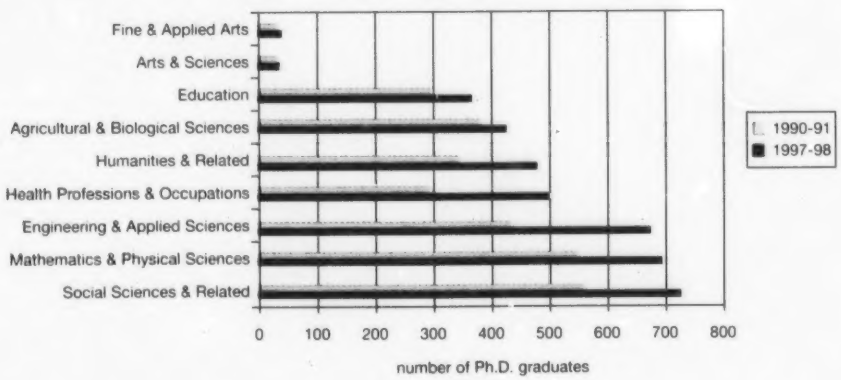


Fontaine and Mills (2001) estimated the number of Canadians already holding a doctoral degree who could become university teachers and the number of students that will obtain a doctorate in the future (and who could become university teachers). They based their estimates on the assumption that only people with a doctoral degree under age 35 would enter the professoriate and that they would enter within 4-5 years of their doctoral graduation (based on the trend that those under 35 are more likely to be in the hiring pool than those 35 and over). In addition, according to census data, 30% of people with a Ph.D. are full-time university teachers. Estimates and assumptions were based on the following data sources: UCASS (University and College Academic Staff Survey), USIS (University Student Information System), NGS (National Graduate Survey), and census data.

In either case, the projected numbers do not approach predicted demand.

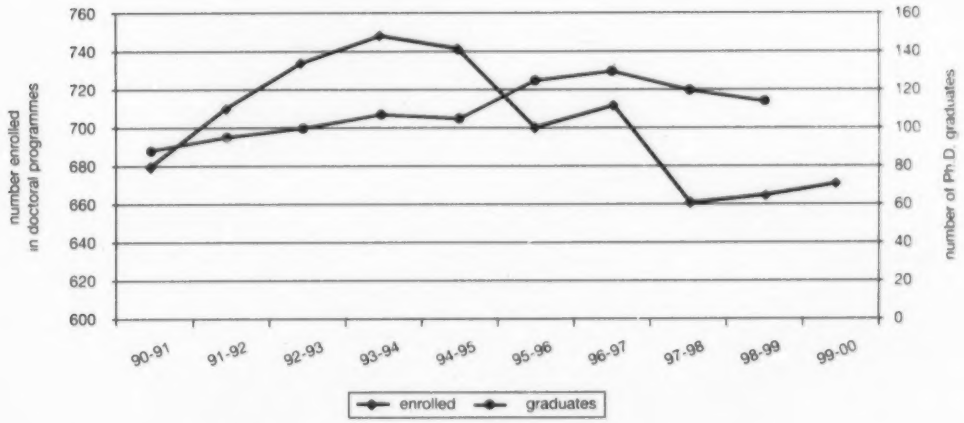
The number of Ph.D. graduates across Canada by field of study is shown in Figure 12. Between 1990-1991 and 1997-1998, the number of graduates increased in all fields, with the greatest gains in Engineering and Health.

Figure 12
Number of Ph.D. graduates by field of study across Canada, 1990-1991 and 1997-1998



While certainly not all new faculty members hired by Maritime institutions will have completed their doctoral degree in the Maritimes, it is nonetheless useful to consider the number of those enrolling in, and graduating from, doctoral programmes within the region. From 1990-1991 to 1993-1994, the number of students enrolled in doctoral level programmes increased sharply, from 678 to 750, and fell to a low of 660 in 1997-1998. More recently, numbers have begun to pick up, standing at 670 in 1999-2000 (Figure 13). Looking at the actual supply of doctoral graduates, the total number in the region has climbed somewhat more steadily, but has recently declined (Figure 13).

Figure 13
Number of students enrolled in doctoral level programmes and number of Ph.D. graduates, in Maritime institutions, 1990-1991 to 1999-2000



*data unavailable for the convocation years 1999 and 2000
Note: graduation year is first year of range - for example, for academic year 1998-1999, graduation year is 1998.

The duration of a doctoral level programme can vary considerably between fields; to estimate an overall completion rate, we assume an average of six years duration. The number of Ph.D. graduates in 1998 was 16% of the number enrolled six years earlier. For 1997, this figure was 17%, and for 1996, 20%. These numbers appear to be very low; further examination of Ph.D. completion rates is important, especially given the impact on supply of future faculty.

Figure 14 illustrates the distribution of enrolments in doctoral level programmes in the region, by field of study. Certain fields of study have experienced declines in enrolment, such as Education, Health Professions, and Humanities & Related. The steepest decline occurred in Mathematics & Physical Science. Enrolment gains were experienced in Social Sciences, Agriculture & Biological Sciences and Engineering & Applied Science. A list of major fields of study available at the doctoral level in Maritime institutions may be found under Appendix 5.

Figure 14
Number of students enrolled in doctoral level programmes in Maritime institutions, by field of study, 1990-1991 and 1999-2000

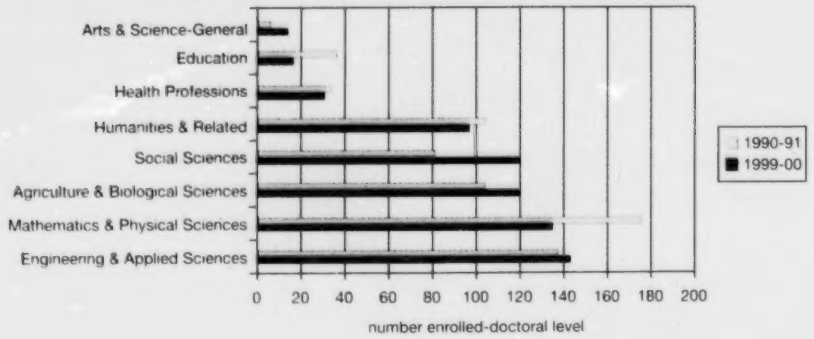
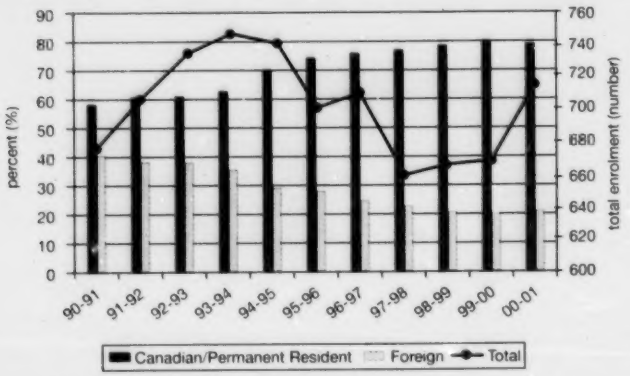


Figure 15 illustrates the distribution of doctoral level enrolments by citizenship in Maritime institutions between 1990-1991 and 2000-2001. The number of doctoral students who are citizens of a foreign country has declined by nearly 21 percentage points over this interval. The overall number of doctoral students declined between 1993-1994 and 1997-1998, but more recently increased significantly. Giroux (1999) stated that the proportion of graduates who are foreign are not immediately part of the hiring pool. The Maritime trend indicates that the enrolment rebound is not occurring among foreign students, suggesting a potential hiring pool somewhat greater than earlier in the decade (for example, 1995-1996).

Figure 15
Distribution of enrolment in doctoral level programmes by citizenship, in Maritime institutions, 1990-1991 to 2000-2001



The decline in foreign student enrolment occurred in all fields of study (numbers were too small in Commerce & Administration and Education), but was more significant in Mathematics & Physical Sciences and Engineering & Applied Sciences (a loss of 30 percentage points each). Humanities & Related lost 2 percentage points.

2.5 Ph.D. graduates - Estimated supply

Based on Giroux's (1999) estimation that 35% (1400 out of 4000) of new doctoral degree recipients enter academe, we can predict that, based on an annual graduation rate of 120, 42 will enter academic careers. Given the estimate that 181 new full-time faculty will have to be hired each year for the next ten years to make up for retirements and attrition, then we can expect that about 23% of these positions could potentially be filled by graduates who studied in the Maritime region. Given that the range of doctoral level programmes available in the region cannot provide candidates suitable for all positions in all disciplines, then this leaves at least three-quarters of the positions that will have to be filled by graduates who studied outside the region.

It is possible that new full-time faculty may be recruited from among those currently employed on a part-time/contract basis; a third supply source that is less easily described is the remaining 65% of Ph.D. graduates who do not enter careers in academe. There exists the potential to recruit new faculty members from among those who have chosen to enter careers in other sectors. It is likely that a recruiting strategy targeted at this group would have to take into account mechanisms to bring them up to speed with regard to their respective disciplines as well as assistance with pedagogy.

3. FACTORS INVOLVED IN FACULTY RECRUITMENT AND RETENTION

All institutions and faculty associations on the Commission's schedule were asked to respond, either informally or in writing, to a short questionnaire (Appendix 2). The objective was to assess the current situation in the region with regard to faculty recruitment and retention. Where necessary, written responses were followed up by MPHEC staff.

While faculty associations generally were unable to provide detailed data on the topic, some did provide anecdotal information. Of the associations which responded, most expressed agreement that faculty recruitment and retention was a crucial issue for their membership. Specific aspects raised included non-competitive salary levels (nationally or regionally), insufficient government funding, and the need for more support for research. They also raised concern that the full-time complement is shrinking. The hiring of increasing numbers of part-time staff, coupled with rising enrolment numbers, is increasing the workload for those full-time faculty remaining. One organization, Acadia University Faculty Association (2002), provided a study on recruitment and retention, including departmental level concerns and a financial analysis.

The type of response received from the institutions varied considerably, especially with respect to projected hiring needs, and hiring statistics. While some were unable to provide any data, still others provided detailed information by faculty and department. One institution, Université de Moncton (2001), supplied a published report on faculty renewal. The overall picture arising from those institutions that responded to the questionnaire appears to be divided along the lines of institution size, and discipline.

Due to their size and research capacity, Dalhousie University and the University of New Brunswick are to a greater extent in direct competition for the same pool of talent with Canada's largest institutions. The Université de Moncton is in a unique situation in that it competes for faculty with universities in Québec, rather than with those elsewhere in North America.

Generally, the intense competition for top faculty is not being felt to a great degree in the primarily undergraduate institutions here, with the exception of certain disciplines, such as Veterinary Medicine, Information Systems/Computer Science, Engineering, and Nursing.

It could be argued that primarily undergraduate institutions attract somewhat different candidates than do comprehensive and medical/doctoral[4] institutions, due to fewer or no graduate students for research support, smaller faculties and departments, greater focus on teaching, and fewer opportunites for research networking and collaboration.

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[4] Medical/Doctoral: universities with a broad range of Ph.D. programmes and research, as well as medical schools. Comprehensive: universities with a significant amount of research activity and a wide range of programmes, including professional degrees, at the graduate and undergraduate level. Primarily Undergraduate: largely focussed on undergraduate education, with relatively few graduate programmes. Source: The MacLean's Guide to Canadian Universities, 2002 (www.macleans.ca/pub-doc/universities_2002/index.htm)

Anticipating that they will eventually be affected to a much greater degree by the situation now experienced elsewhere, most institutions have begun, or have planned to begin, tracking data on hiring needs, new recruits and leavers more formally. Specifically, retention issues are getting a lot more attention - while retirements can be planned for well in advance of position vacancies, unexpected losses cannot, thus drawing more focus on reducing the number that leave. As one respondent pointed out, the surplus of labour in the United States that helped to feed the faculty hiring boom in the late sixties and early seventies does not now exist, and the competition is occurring all across North America. Appendix 3 summarizes Maritime institutional policies, plans and strategies.

Whether or not new candidates are easily recruited, the main factors involved in attracting them and, equally importantly, retaining them, are common across the country. For the most part, the survey of Maritime institutions did not uncover factors unique to an institution or to the region, that have not already been experienced elsewhere in Canada.

This section explores the main issues surrounding the faculty recruitment and retention issue, and compares the responses from Maritime institutions with findings at the national level. Following the discussion of each issue, options and best practices addressing the issue at a broad level are presented.

3.1 The vast majority of leavers departed within three years of job acceptance

The Laurier Institution's (2000) study, and those Maritime institutions that collect this type of information, either formally or anecdotally, all confirm that the vast majority of leavers depart within three years of job acceptance.

What is behind this finding, and what can be done about it, seems to be the most compelling issue that institutions must tackle. Currently it seems that, save for a few high-demand fields (*eg.*, Computer Science and Engineering) attracting enough applicants to advertised positions does not seem to be a problem; rather it is retaining new faculty, especially over the crucial first few years of employment, that constitutes the main challenge for many Canadian universities. Tempting offers presented to relatively new hires not settled, or not pleased with their working environment, may prove too good to pass up. In fact, many strategies geared to retaining faculty are focussed on these early years. However, this is not to say that attracting highly qualified applicants will not become a much greater problem, and indeed, this issue has been addressed in the various studies across the country.

It is clear that proactive measures have to be taken immediately to assist newcomers in establishing their research and place in the community.

Where do the leavers go? Within Canada, surveys of faculty leaving their position for reasons other than retirement showed that while there is a significant migration to the United States, from 23% of Ontario (Smith, 2000), and 43% of British Columbia faculty (The Laurier Institution, 2000), the greatest draw on existing faculty comes from elsewhere in Canada or the home province. Comparable data on where leavers go, provided to the MPHEC by the University of New Brunswick in early 2001, showed that, of faculty who left between 2000 and 2001, 62% went elsewhere in Canada (with only one to another province in the Maritimes), 27% went to the United States and the rest to another country.

3.2 The money pit

It is apparent that money is not the primary factor determining recruitment success. The problem - and the solution - are much more complex. A study carried out by The Laurier Institution (2000) on behalf of the four public British Columbia universities, which interviewed top level administrators and surveyed department heads, faculty, new hires and recent leavers, found that the salary package was not perceived to be the primary factor in attracting candidates to accepting offers. Interestingly, however, salary was the primary reason for existing faculty accepting a position elsewhere. So, it seems that money is important, but more often in the context of other factors.

The topic of salary gets a mixed reaction among the various Maritime institutions. Keeping in mind that information provided on the matter of why faculty members quit their positions (other than retirement) is for the most part anecdotal, the general understanding is that if someone is looking for another job, they can find one, and often for more money. One institution reported that all of those faculty members who recently left accepted offers with more money, but again, the sense was that these people were not necessarily looking for more money *per se*. One institution reported no sense that faculty left specifically to get more money, while others reported instances of faculty members leaving specifically for more money (in one case to the private sector - Computer Science).

Currently, it may indeed be enough to attract candidates on the merits of the department and lifestyle in the local area, without sweetening increasing salaries. But, with the action being taken by institutions outside the Maritimes [for example, putting in salary floors of $50,000 (Ontario) and implementing market differentials for certain fields] it is likely that institutions in the region will lose a competitive edge without changes to salary policy.

Options / Best Practices

- Implement salary floors (minimum salary for new hires) or higher starting salaries competitive with similar institutions across Canada.
- Allow faster progression through salary structure.
- Establish an "opportunity fund" dedicated to securing highly desirable candidates who come onto the hiring market in advance of plans to hire in a particular area.
- Provide low-interest mortgages especially to new hires.
- Provide student loan relief or refinancing to new hires.
- For top candidates identified early on, provide funding to complete Ph.D. studies in return for service.

3.3 A nice place to live

The surveys completed by The Laurier Institution (2000) found that the number one factor enabling hiring in British Columbian universities was the quality of life in the region (on the other hand, the cost of living in the region was a deterrent to hiring). Institutions in the Maritime region also indicate that this is an important factor in attracting new faculty - one respondent mentioned a new faculty member who had left a large urban centre for the Maritime lifestyle. A university in the Halifax region perceived it had an advantage because of the proximity of several other institutions in the same city, which might enhance recruiting efforts with more spousal employment opportunities and the amenities of a larger centre.

Maritime universities in more rural areas offer a different quality of life again. The problem encountered by some of these institutions, however, is that some people accept offers and then they or their families end up unhappy about where they are living. It may be for cultural reasons or too few opportunities for spousal employment. One institution located in a rural area pointed out that single female candidates find the area socially limiting and some candidates cannot conceive of living in such a small town. Nevertheless, while it is a major reason for leaving for certain people, others claim it as an important reason for staying.

On a related issue, Maritime universities in rural locations are geographically isolated. Associated with this are increased costs of attending meetings and conferences, and carrying out collaborative research. While not raised specifically by any Maritime institution, it is likely a consequence of living and working in the region, particularly in more rural areas.

Options / Best Practices

- Institutions in the Maritimes can use the quality of life in the region to their advantage as well as the relatively lower cost of living (applies more to rural institutions).
- To avoid difficulties with new faculty directly related to the cultural aspect of life in the Maritimes, every effort should be made to ensure potential candidates are made well aware of both the advantages and disadvantages of living in a particular location. Frank discussions with other faculty members on how they made the transition may also help.
- Some institutions across Canada have an arrangement with real estate agents that can give tours of the area at the time of the interview.
- Information on the local area can be used in advertising campaigns.
- Efforts could be made to introduce candidates from ethnic minorities to appropriate cultural organizations in the area.
- As pointed out above, many institutions in the region are geographically isolated. The University of Northern British Columbia (2001) has addressed this issue in its recommendations of the recruitment and retention committee, suggesting increased travel budgets for conference presentations and formal recognition (through amended guidelines) the differential cost of provincial, national, North American, and international conferences.

3.4 A nice place to work

There are a number of reasons why people choose to stay at an institution. Perhaps somewhat less tangible is the issue of a 'nice place to work'. "A scholar will weigh the extent to which a university - and prospective home department within it - has an environment conducive to the development of teaching and research" (Smith, 2000). The University of Calgary's task force report found that "a number of faculty were demoralized and felt undervalued, discouraged by the conditions they experience on a daily basis - heavy teaching assignments, pressures to demonstrate research outputs, and demands to make service contributions."

The Laurier Institution found that the quality and reputation of the university and department ranked second as a factor influencing successful hiring. The retention of existing faculty depends to a great extent on a collegial atmosphere "Creating a vibrant university environment allows institutions to attract and retain high quality faculty and senior administrators" (The Laurier Institution, 2000). The components defining a collegial atmosphere include addressing gender issues, recognition of performance in all aspects of the job, ensuring a real voice for faculty members in creating and shaping a vision for their unit, a reasonable teaching load, and maintaining a balance between teaching/service commitments and commitments to research (The Laurier Institution, 2000; University of Calgary, 2000). Lower salaries will be tolerated to a point, but only if there are other advantages to offset them (University of Calgary, 2000).

Furthermore, the relative increases in part-time staff are likely to have a negative impact on morale due to expected increases in workload for the remaining full-time faculty.

No institutions in the Maritimes raised the work environment matter as impacting upon faculty recruitment and retention; this might be an effect of surveying at the upper administrative level (in the surveys carried out by The Laurier Institution, differences in replies were found among the administration, deans, and faculty). It is possible that a survey of individual faculty would uncover comments regarding the quality of the work environment.

With regard to gender issues, it is quite clear that female faculty members in the region simply do not have the same representation as male faculty. Not only are there fewer female full-time faculty members, with women comprising just 36% of the total number, but 61% of all part-time contracts are held by women. Women employed part-time are also less likely to hold a Ph.D. Findings of The Laurier Institution (2000) indicated that a number of female faculty were experiencing a 'chilly climate' in some departments, and generally had a heavier involvement in supervisory and administrative committees than did their male counterparts. As a result, attrition rates were higher among female faculty. While this issue was not raised by the Maritime institutions who responded to the questionnaire, statistics alone suggest that an extra effort should be made to ensure that women get the maximum benefit from a collegial atmosphere.

Options / Best Practices

- Enable new faculty to participate in the full range of their academic unit's activities, while sparing them overload.

- Increase, where possible, the opportunities for women in senior faculty and administrative positions.
- Review policies with regard to meeting the needs of female faculty, and attract top female candidates.
- An effort should be made to ensure equality with respect to administrative duties.

3.5 Recognition of performance

"A major element in recognizing faculty accomplishments and contribution to departmental and university goals is promotion and advancement in the salary scales" (OCUFA, 2001). For those faculty at the salary ceiling of their rank, one-time bonuses or additional salary steps may be awarded.

Recognition through salary is only one element; as the Simon Fraser University (1999) report suggests, there is also a need to create more opportunities to publicly acknowledge faculty success, at the department, faculty or university level.

Options / Best Practices

- Monetary rewards (salary top-ups, bonuses) for exceptional faculty (based on performance, and or market differentials for certain fields).
- Allocate time and resources to most outstanding faculty to enable them to carry out projects of particular value to their departments and the university. This could be done through endowed chairs or a university professorship programme.
- Reduction of teaching load for more productive scholars; use teaching track for those less interested in research.
- General recognition of merits and successes.

3.6 Teaching load

Heavy teaching loads, especially in the crucial first years, are a deterrent to retention. This is especially a problem in primarily undergraduate institutions, without graduate students to serve as teaching assistants. At least one Maritime institution reported reducing the standard teaching load for new hires, with a reduced load for all faculty to be phased in.

Options / Best Practices

- Flexibility in course release.
- Reduced standard teaching load.
- Allow emphasis on teaching for those who wish promotion and tenure decisions to be based on this (for example, 75/25 teaching/research).
- Reduced load for new hires.

3.7 Research support

For senior faculty, access to an adequate research support network can be as important as salary considerations (The Laurier Institution, 2000). Availability of laboratory space, updated research facilities and funding and support to help establish a research programme for junior faculty are important considerations. Primarily undergraduate institutions in the region are at a disadvantage in some respects, as there are very few, or no graduate students to help support research and there are fewer opportunities to network and collaborate. As a result, it may be difficult for these smaller institutions to attract higher calibre research candidates. One Maritime institution reported having recently lost faculty to other institutions for this reason.

Options / Best Practices

- More money for start-up to establish research programme.
- Seed money for new programmes of research.
- Ensure adequate space.
- More support for humanists and social scientists.
- More support for graduate students, where applicable.

3.8 Federal support

Federal support for university research includes the granting councils (including Natural Sciences and Engineering Research Council, Social Sciences and Humanities Research Council, and Medical Research Council) and more recently implemented programmes such as the Canada Research Chairs, Canadian Foundation for Innovation (CFI) and a programme to cover the costs of indirect research. The extent to which these newer programmes have augmented research capacity in this region is somewhat uncertain; the current situation points to less-than-optimal results. For example, although the region has over 10% of the country's full-time faculty (1998-1999), nearly 9% of full-time university students (1998-1999), and 6% of the population (2000-2001), projects in the Maritimes have received just 2% of all funds disbursed from CFI to date (January 2002). While the Canada Research Chairs programme was meant to help institutions attract the 'best and brightest' scholars, institutions in this region do not seem to be realizing the full potential of this programme: one institution commented that it was difficult to recruit candidates to fill the Canada Research Chair positions; while still others are having difficulty retaining those hired under the programme. An assessment of the impact these programmes have had in this region, exploring both positive and negative results, would be beneficial.

3.9 Recruiting

Generally speaking, recruiting efforts are becoming more pro-active across the country. Increasingly, universities approach the people they want to hire first (Elliot, 2000). There was at least one example of an institution in the Maritimes identifying promising candidates pursuing a Master's degree and offering interest-free loans to finance their Ph.D. studies in return for service at the institution.

There is an increasing use of web sites in recruiting. The University of Windsor website (http://athena.uwindsor.ca/facultypositions) has been cited (O'Heron, AUCC, personal communication) as an excellent example. An informal survey of Maritime institutional websites in late October 2001 uncovered an interesting finding: no home pages had a direct link to a page with available faculty positions. In most cases, at least four links had to be followed from the home page, and positions were variously found under departmental pages, Human Resources, or "What's New". In some cases, it was not obvious how to find vacant positions at all. As of June 2002, the University of Prince Edward Island and University College of Cape Breton had added a direct link.

Yet another dimension encompasses the hiring process. Universities across Canada are making efforts to coordinate efforts and streamline the process. An example of detailed guidelines for recruiting may be found on the University of Saskatchewan's website: http://www.usask.ca/vpacademic/recruitment/recruitandappoint.shtml

Options / Best Practices

- Pooling vacant positions with competition among departments to fill them.
- To avoid decreased morale in departments with excessive hiring at the assistant professor level, hiring at all ranks is desirable.
- The addition of a direct link from the home page is an easy way to inform a select group of potential candidates, that is, ones who have already made an effort to go to the institution's web site. Making their search for employment opportunities easier will enhance the recruiting process.
- Enhanced print ads, cluster hiring, and overt selling of the university and lifestyle are being increasingly used.
- Coordinate hiring efforts with other institutions in the area (especially as this applies to spousal hiring: maybe the hiring institution does not have a vacancy, but an institution close by does).
- Coordinate hiring efforts with government departments, for the same reason.

4. CONCLUSION

Responses from the Maritime institutions indicate little difference from the other institutions across Canada in perceptions of the factors impacting upon recruitment and retention. However, while a few institutions are actively addressing the problem, many do not yet consider the issue their top priority, and for a small number, it does not even register on the radar screen as an issue to be addressed in the near future. In view of Farquhar's (1999) study of 15 institutions across Canada, where institutions can be categorized into either the retrenchment, renewal or retention stages of addressing the issue, it can be said that all of these categories are represented by institutions in the region.

While a few institutions in the region have begun to address the issue, and some are farther along in the process than others, none of the region's institutions can be said to be in the vanguard of those formulating and executing comprehensive plans and policies to deal with increasing competition. But then again, they are not facing the same pressures as say, Ontario, which faces a 40% increase in enrolments by 2010 as a result of the double cohort (effect to peak in 2004-2005), predicted rising participation rates, and an increase in the population aged 18-24 'Echo boom'. The Eastern provinces, with the exception of Nova Scotia, face stagnant or declining population numbers. Newfoundland and Labrador will experience the worst declines (Elliot, 2000). In addition, they have not yet benefited from a regional-scale examination of the problem, as have British Columbia and Ontario.

It should be emphasized that the region's two largest universities may face different recruiting pressures than will the smaller, primarily undergraduate institutions, as it can be argued that they attract a different group of candidates. These larger institutions, more research intensive and with a range of graduate programmes, can be said to be in more direct competition with similar institutions across Canada. It is possible that the smaller institutions will not feel the effects of increased competition as soon, or to the same degree.

Chillingly, one institution wondered what the options will be in the very possible event that positions go unfilled. The respondent speculated that options may have to be conceived that make more efficient use of existing faculty, for example, the use of instructional assistants and more distance education.

There are alternatives to hiring, as explored by Smith (2000). These include higher student faculty ratios, increased tuition and private revenues, and reduced student access, which would lead to a fundamental change in government principles and would not be wise given the proven returns of education (Smith, 2000). Increasing the efficiency of faculty really seems to be a non-issue, as they are already at a peak, with an average work week of 50-60 hours (Smith, 2000), not to mention the negative impact on morale of an increased workload.

It is hoped that the findings presented in this report will help to illuminate the situation in the Maritimes, and that institutions will be able to use it and the references within to form strategies and plans to be prepared to deal with this issue. In addition, this paper can provide background and can inform discussions between institutions, faculty and governments in the formulation of regional and/or provincial policies targeting this issue.

It is clear that much of the work will have to be undertaken at the institutional level. The creation of specific strategies and guidelines to enhance recruitment and retention efforts will be influenced to a great degree by institutional size, focus and mandate. However, these efforts should not take place in a vacuum.

Policies targeted at faculty recruitment and retention at the provincial or regional level would enhance the efforts of individual institutions and increase the competitive abilities of the region as a whole. The generation of such policies might best occur through a free discussion of this topic among institutions, faculty, and governments.

From a public policy perspective, it is clear that the Maritime universities alone cannot solve this issue. Many of the possible interventions will require additional resources, as well as policies, from provincial and federal governments. The other potential danger is that the Maritime provinces may well be specifically identified by other jurisdictions as a fertile ground from which to recruit faculty members, in the absence of a strategy to recruit and retain them.

Another point to keep in mind is that policies created to target this issue should not be developed in isolation from the other factors that are affecting our universities and the post-secondary sector in general.

BIBLIOGRAPHY

Acadia University Faculty Association. 2002. **Recruiting and Retaining Faculty**. www3.ns.sympatico.ca/aufa/newslett/0112/recruiting.htm.

Association of Universities and Colleges of Canada (AUCC). 1999. **Trends**.

Carleton University. 2000. **Report of the Task Force on Faculty Recruitment and Retention**. www.carleton.ca/cu/research/tffrre.html.

Council of Ontario Universities (COU). 1992. **Renewal of the Professoriate. Report of the COU Task Force on Faculty Renewal**.

Elliot, L. 2000. **Revitalizing universities through faculty renewal**. AUCC Research File vol. 4 no.1.

Farquhar, R. 1999. **Retrenchment, Renewal and Retention: The three Rs of Institutional Revitalization in Canadian Universities**. Prepared for the Association of Universities and Colleges of Canada.

Fontaine, C. and Mills, S. 2001. **Results of a Statistical Study of Canadian University Enrolments and Graduates and Implications for the Full-time Professoriate in Canada**. School of Mathematics and Statistics, Carleton University.

Giroux, R. 1999. Speech: *Faculty Renewal the Numbers, the Direction*. www.aucc.ca/en/speeches/oct0699.htm.

MacLean's Guide to Canadian University (The). 2002. www.macleans.ca/pub-doc/universities_2002/index.htm).

Mullens, A. 2001. *"The Sessional Dilemma."* University Affairs. May 2001.

OCUFA. 2001. **Less Isn't More: Ontario's Faculty Shortage Crisis**. Ontario Confederation of University Faculty Associations.

Shapiro, D. 2001. *"Modeling Supply and Demand for Arts and Sciences Faculty."* **The Journal of Higher Education 2** (5):532-563.

Simon Fraser University. 1999. **President's Task Force on Faculty Renewal and Retention**. www.sfu.ca/vpacademic/committees/Task Forces/renewal/report/report.htm.

Smith, D. 2000. **Will There Be Enough Excellent Profs? Report on Prospective Demand and Supply Conditions for University Faculty in Ontario**. Council of Ontario Universities.

The Laurier Institution. 2000. **Renewal and Retention: Attracting and Keeping Faculty and Senior Administrators at British Columbian Universities**.

University of Northern British Columbia. 2001. **Report of the Recruitment and Retention Committee, University of Northern British Columbia**. www.unbc.ca/vpac/.

University of Calgary. 2000. **Report of the Task Force on the Recruitment and Retention of Academic Staff**. www.ucalgary.ca/hr/recruit/rrtaskforce.html.

Université de Moncton (2001). **Renouvellement du corps professoral**. Vice-rectorat à l'administration et aux ressources humaines.

University of Saskatchewan. 1999. **Recruitment and Appointment of Academic Staff**. www.usask.ca /vpacademic/recruitment/recruitandappoint.shtm.

APPENDIX 1: METHODOLOGIES

Acadia University Faculty Association (2002)

Purpose: to determine the extent of the faculty recruitment and retention problem and explore possible solutions. All Heads and Directors were contacted and asked to respond with their concerns; the main agenda item of the September general meeting of the AUFA was devoted to discussing the issue. Solutions were explored with input from all Departments and Schools.

Carleton University (2000)

Purpose: to determine how to deal with recruitment and retention challenges. This report consisted of an analysis of basic demand by faculty, consultations with deans and chairs; E-mail survey of faculty (30 faculty members responded); interviews with recent leavers (faculty); survey of best practices in hiring and retention at other universities in Canada (through Director of Human Resources).

Farquhar (1999)

Study commissioned by the AUCC. Purpose: "to provide a snapshot of how institutional leaders are addressing this opportunity, where they are in the process and what results they are realizing." Forty interviews were completed at 15 universities (all regions, Anglo- and Francophone, small, medium and large) across Canada. At each university, VP Academic, a dean and departmental chair were interviewed. Interviews of deans and chairs were limited to liberal arts disciplines for generalizable results.

Fontaine and Mills (2001)

Statistical analysis of Canadian university enrollments and graduates; modelling the effects of retirements and attrition on number of full-time faculty; prediction of impact of these findings on the professoriate, 1998-2018.

Simon Fraser University (1999)

Purpose: "to bring forward strategies for attracting, keeping and developing our faculty resource to ensure we remain a top-ranked institution." The Task force consulted with individuals and groups from the University and the broader community, surveyed chairs and directors of academic units and faculty hired since 1992, and considered university faculty and budget information.

Smith (2000)

Purpose: to examine prospective demand and supply conditions for faculty over the next decade. This study analysed data and results of interviews of new faculty and recent leavers (COU special surveys conducted for the Council on University Planning and Analysis Committee on Faculty and Staff Reporting).

The Laurier Institution (2000)

Purpose: to determine the factors that influence the renewal and retention of senior administrators and tenured and tenure track faculty. This study was commissioned by British Columbia universities and Confederation of University Faculty Associations of British Columbia. Interviewed VP Academics, Provosts, Deans, Presidents of Faculty Associations. It consisted of electronic surveys of department heads, tenure and tenure track faculty, new hires and recent leavers (survey of candidates refusing offers attempted, but response rate too low).

Université de Moncton (2001)

This study analysed predicted retirements across campuses and faculties as well as demographic data and national hiring needs.

University of Calgary (2000)

Purpose: to develop and recommend a broad strategy through which the University can ensure successful recruitment and retention of academic staff in current and emerging conditions. The task force consulted extensively with the academic community. In addition to data gathering on campus, extensive research was undertaken using materials found through a web search and suggested by various individuals.

University of Northern British Columbia (2001)

Purpose: to develop a faculty recruitment and retention plan to enhance the quality of professional life and sustained productivity of faculty and to improve the ability to attract outstanding teachers and scholars in an increasingly competitive market. This study analysed personal interviews of a large subset of the faculty (80-90).

APPENDIX 2: QUESTIONNAIRE

AAU-MPHEC Advisory Committee on Information and Analysis
Faculty Recruitment and Retention Questionnaire

The joint AAU-MPHEC Advisory Committee on Information and Analysis is carrying out preliminary research on the topic of the challenges of faculty recruitment and retention in the Maritime region. This brief questionnaire will help to determine what each institution has done (or plans to do) to address this important issue, and what institutional statistics and information on the subject might be readily available. We also request that you provide a name and contact information for follow-up to these questions.

For each item, please state whether this is internal information or readily available. If the statistics and information are available, would you please forward them with your response. Also, please feel free to supply documentation that addresses these issues in lieu of a direct written response.

1. Does your institution collect and/or analyse statistics on the following (please provide breakdown by discipline if possible):
   a) number of vacant faculty positions, current and projected
   b) number of new hires within the past three years
   c) estimated number of new hires in the next three years
   d) average number of applicants per position
   e) hiring success rate:
      - What proportion of candidates who are first choice of the hiring committee accept an offer of employment?
      - What proportion of offers are rejected?

2. Has your institution surveyed (formally or informally) exiting faculty and/or candidates rejecting an offer of employment in order to discover reasons for leaving?

3. Has your institution made, or does it plan to make, any changes to internal recruitment or retention policies to directly address the projected faculty shortage? If so, please describe.

APPENDIX 3: SUMMARY OF MARITIME INSTITUTIONAL PERSPECTIVES, POLICIES AND PLANS[5]

Atlantic School of Theology	• Very small faculty, but in competition with other similar schools. • Dearth of Ph.D.s in fields required.
Dalhousie University	• The size and diversity of Dalhousie, as well as heavily decentralized budgetary process makes it neither desirable nor possible to approach the overall process of recruitment and retention in the 'hands-on' fashion that smaller institutions might find desirable and possible. • Faculty recruitment is a major focus of an initiative being launched in the winter term - this will have a 5-year time frame and each Faculty (except medicine) will be part of it. This initiative will include collection of information on candidates rejecting offers of employment.
Holland College	• Retention of faculty has not been an issue. • Revitalization of the college workforce includes creating demographic profile of staff complement, development of succession planning strategy, review of current compensation strategies, review of contract employment and job security issues, development and implementation of professional development and staff training strategy and identification of human resource issues related to implementation of applied degree programmes.
Maritime Forest Ranger School	• Increased salaries.
Mount Allison University	• Those leaving cited larger departments and better research opportunities and support (including graduate students) as factors motivating their moves; some have also cited opportunities to live in a bigger centre with greater options for spousal employment, or more diverse communities. • Single female candidates find Sackville socially limiting. • High teaching loads are a concern as are comparatively low salaries. • Not providing market differentials (Commerce, Computer Science) hampers recruitment. *Policies:* • Recruitment and retention is number one priority in Strategic Plan. • Vice President Academic developing strategy which includes increased research start-up funding, greater flexibility in course release for new faculty, stronger marketing of the University and local area, improved relocation funding, consideration of on-campus day care, consideration of competitive university-funded mortgage lending, and access to entry level housing and donships where possible.
Mount Saint Vincent University	• Not feeling predicted effects yet; no sense that people are leaving because they are unhappy with their work environment or specifically for more money. *Policies:* • Flatter salary structure - faster progression and fewer increments. • Higher starting salaries. • Research office mentorship programme for junior faculty. • Annual workshops to help prepare faculty for reappointment, tenure and promotion. • VP Academic's office preparing information package for the 2002-03 recruitment process - emphasis on selling the University and Halifax. • Relocation reimbursement under review. • Departments are improving administrative aspects of interviews.
Nova Scotia Agricultural College	• No issues identified. • No special policies implemented.

[5] At time of writing, no response had been received from Acadia University and Université Sainte-Anne.

Nova Scotia College of Art and Design	• No shortage of available faculty for many disciplines. • Expect that in areas where there are shortages, Tier II advertising will expand list of applicants. • Differential pay schedules may be an alternative to attract higher-demand faculty.
St. Francis Xavier University	• Faculty recruitment and retention is not #1 worry (perceive budgets, revenue from government as greater worry). • Not feeling the crunch yet. • Anyone who is looking can find a job, and for more money. *Policies:* • Arts & Science Faculties both have committees on retention. • More sensitivity about what is of interest to faculty, candidates, i.e. provision of extra money for those wanting to start early.
Saint Mary's University	• Recent relaxation of hiring (immigration rules) very helpful, especially in field of finance. • Filling Canada Research Chairs positions will be difficult - high demand for researchers. • Difficult to attract candidates to positions in commerce, information systems, finance, accounting. *Policies:* • Replace retiring full-time faculty with new full-timers. • No spousal hiring policy (would be controversial with faculty unions and departments). • Reduced standard teaching load, from 6 x 0.5 credits to 5 x 0.5 credits, effective immediately for new members, and phased in for existing faculty. • Research start-up funding ($5,000) virtually guaranteed for new hires; funds for equipment negotiated case-by-case.
St. Thomas University	• Have experienced no difficulty in either recruitment or retention of faculty. As a consequence, recruitment and retention data are not tracked.
Université de Moncton	• See excerpt from *Renouvellement du corps professoral* in following pages.
University College of Cape Breton	• Unique lifestyle of area affects recruitment and retention - high percent of new members are originally Maritimers, Nova Scotians or Cape Bretoners. • There is a need to find a non-traditional solution in addition to HR strategies. *Policies:* • Plan to formalize survey - desire to track this data. • Developed "buddy system" to ease transition. • Start-up funding available.
University of King's College	• No special policies implemented. • No issues identified.
University of New Brunswick - Fredericton	• Recruitment and retention challenges are: money, personal needs and priorities (eg., faculty and/or family unhappy), university environment, special market challenges in selected disciplines. • Currently, computer science and engineering not posing a problem in terms of recruitment (perhaps an effect of recession). *Policies:* • Academic plans and priorities are under review. • Monetary issues being addressed through recent collective bargaining process.

University of New Brunswick - Saint John	• Addressing challenges associated with faculty recruitment and retention is a priority. • Exiting faculty and candidates rejecting offers give the following reasons: University's inability to meet candidate's expectations, uncompetitive salary offers, lack of adequate start-up funds, and higher teaching loads. • Difficulty recruiting for Clinical Psychology position - received permission from HRDC to advertise for foreign applicants. *Policies:* • Recruiting package being developed promoting lifestyle advantages of area; will include information on the community and relative cost of living. • Suggested: placing more emphasis on advantages of small institution. • Considering accommodating young scholars by providing environment balancing demands of workload and service commitments with research time. • Considering more relocation assistance (finding accommodations, spousal employment opportunities). • Considering reduced overall workload. • Implementation of options constrained by funding.
University of Prince Edward Island	• Having a particularly hard time recruiting in the Atlantic Veterinary College - retention issue there is chronic. Can't afford to compete with salaries offered in the U.S. • Also had difficulty recruiting for Nursing, and Computer Science, now fully staffed. *Policies:* • Human Ressources department looking at implementing exit sheet for exiting faculty members to find reasons why. • Looking at the possibility of collaborating with the provincial government for recruiting: cross-referencing of jobs, sharing advertisements, brainstorming (would help with spousal employment issue).

Excerpt: **Renouvellement du corps professoral (translation)**
Université de Moncton

Faculty Renewal Policy and Strategy

The Université de Moncton wants to develop a comprehensive institutional approach to faculty recruitment and retention for the next ten years. This will require a concerted effort on the part of the vice-president in charge of administration and human resources, the vice-president in charge of academic matters and research, the campus vice-presidents, and the deans and directors.

Factors to consider in developing a recruitment strategy

1. *Quality of life in Edmundston, Moncton, Shippagan, and the surrounding regions*
   A document describing the comparative advantages of Edmundston, Moncton, Shippagan, and the surrounding regions could be prepared. It would include a description of the employment situation and the economy in those regions, the services available (such as hospitals, schools, and cultural and sports activities), the easy access to beaches, national parks, etc. In particular, the cost of living in those regions must be compared with that of cities such as Québec, Montréal, Ottawa, Halifax, and so on. The document could be posted on the Université's Web site, accessible from the home page.

2. *Strengths of the Université de Moncton*
   A document describing the strengths and comparative advantages of the Université de Moncton could be prepared and made available to candidates. For instance, it would describe the Université's training and research programmes, its specific, unique, or exclusive resources, its distance education expertise, its new technology infrastructure, its research assistance programmes, its release-time system for research, etc. That document could be posted on the Université's Web site, accessible from the home page. Also, each department or school should provide candidates with a document highlighting its own strengths and advantages.

3. *Advertisement of positions*
   Positions that have received budgetary approval could be advertised quite early, preferably in September of each year. The most effective methods for reaching candidates should be used, and the inventory of methods should be reviewed periodically.

4. *Active recruitment*
   Professors should be encouraged to recruit actively with their deans, seeking prospective candidates by establishing contacts with target institutions, doing networking within associations, etc. The many electronic media available, such as e-mail, Web sites, distribution lists, etc., should be used as well.

5. *Recruitment scholarships*
   Efforts should be made in cooperation with the departmental assemblies to identify young doctoral candidates and offer them substantial one-year renewable scholarships, on the condition that they work two years for the Université for each year in which they receive a scholarship.

6. *Bonus*
   In high-demand disciplines, the Université de Moncton could offer a market bonus to candidates with a doctorate, at the assistant level. As soon as they are eligible for promotion, the bonus could be reduced.

7. *Release time for research*
   The Université could consider increasing the number of additional release-time credits for research.

8. *Research bonus*
   The Université could increase the amounts awarded as start-up grants and combine them with the bonuses offered by the unit in question, if necessary.

9. *Basic equipment*
   The Université could consider providing newly hired professors with computers and software to support research activities.

10. *Warm welcome for candidates*
    Special efforts could be made to welcome candidates who come for interviews. In order to make a favourable first impression, the Université should always prepare a warm welcome for candidates, paying careful attention to details. This might involve reserving pleasant accommodations or organizing a meal with colleagues, a laboratory tour, a meeting with the dean or the vice-president, etc.

11. *Jobs for spouses*
    Whenever possible, the Université should consider offering the candidate's spouse a job, e.g., as a researcher or associate professor. Otherwise, efforts must be made to introduce the spouse to other organizations or companies in the region that might be able to offer him or her a job.

Factors to consider in order to improve retention

Ensuring faculty renewal is not just a matter of recruiting new professors. Measures must also be put in place to help retain professors.

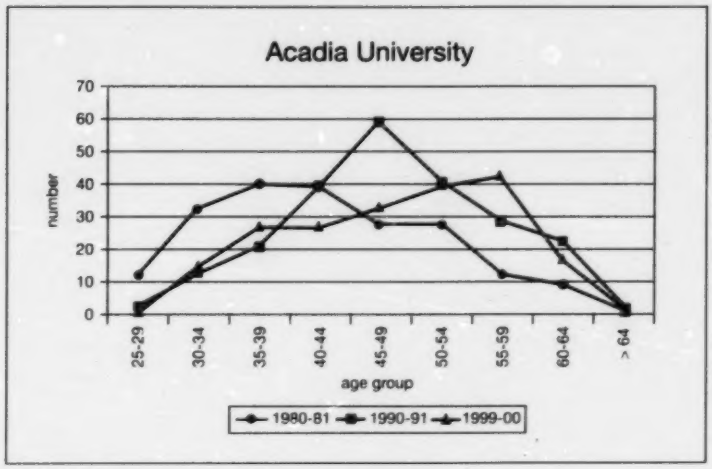
1. *Research grants for new researchers*
   The Université could improve the grants for new researchers, i.e., those with three years of service or less.

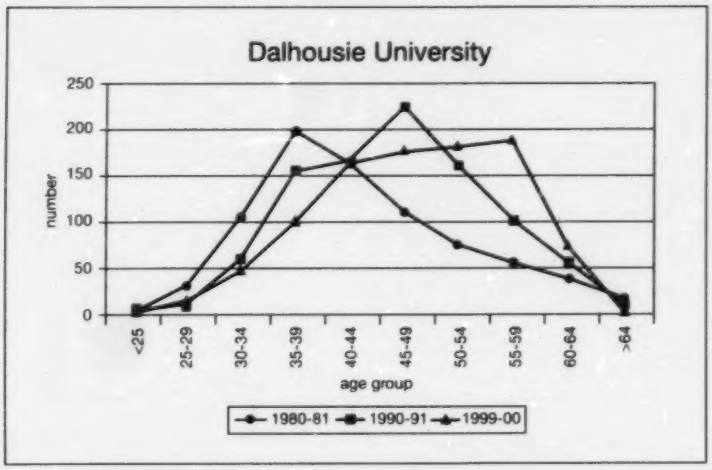
2. *Guidance and support for new professors*
   The different types of assistance offered to new professors, such as educational services, technological services, help in preparing grant applications, integration into existing research groups, and workshops on various topics, should be improved. Special attention should be given to the integration of new professors into the region, and that attention could even extend to other members of the family.

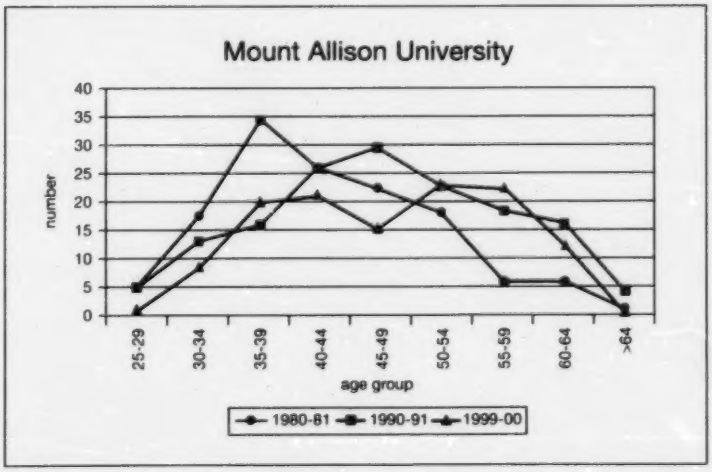
3. *Recognition of new professors' contributions*
   Various ways of recognizing the achievements of young professors could be considered.

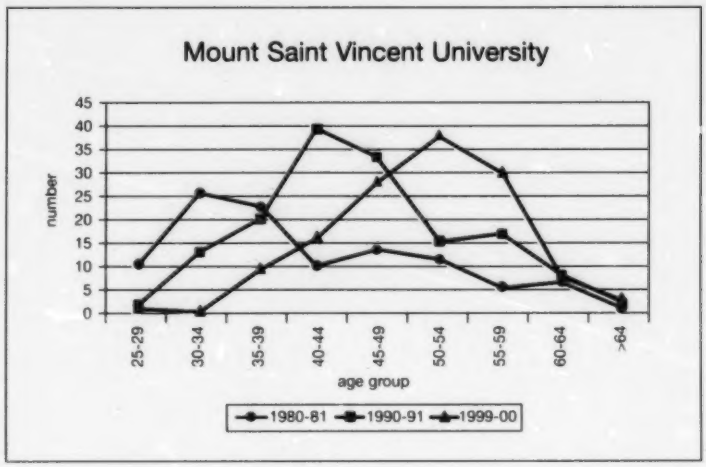
4. *Consolidation grants*
   For those who have obtained tenure, the Université could make funds available for research and teaching activities.

APPENDIX 4: FACULTY DEMOGRAPHICS AT MARITIME UNIVERSITIES: NUMBER OF FULL-TIME FACULTY BY AGE GROUP





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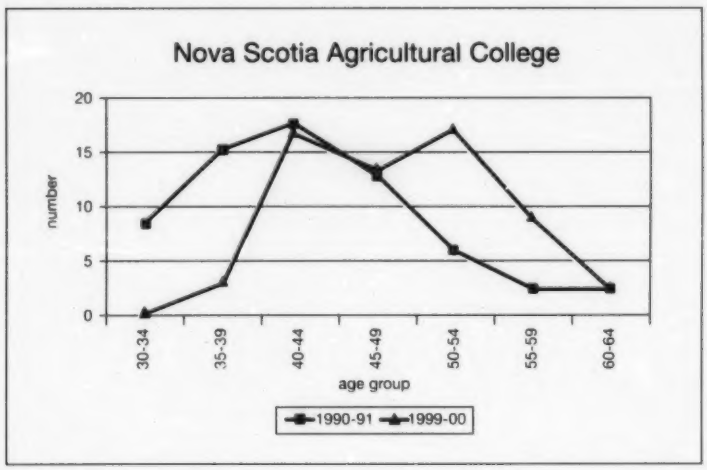
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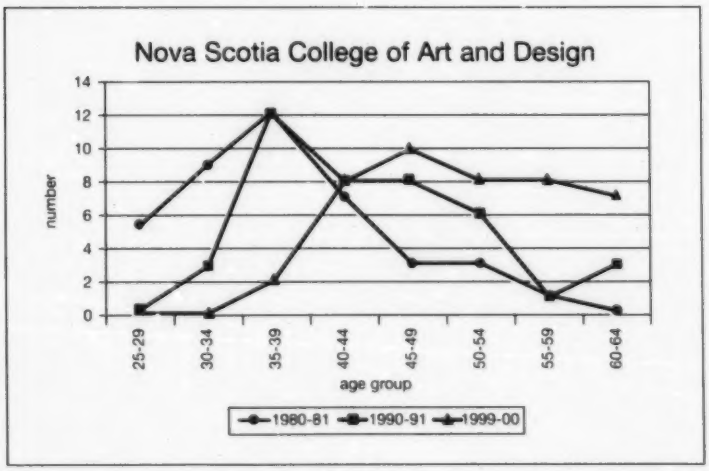
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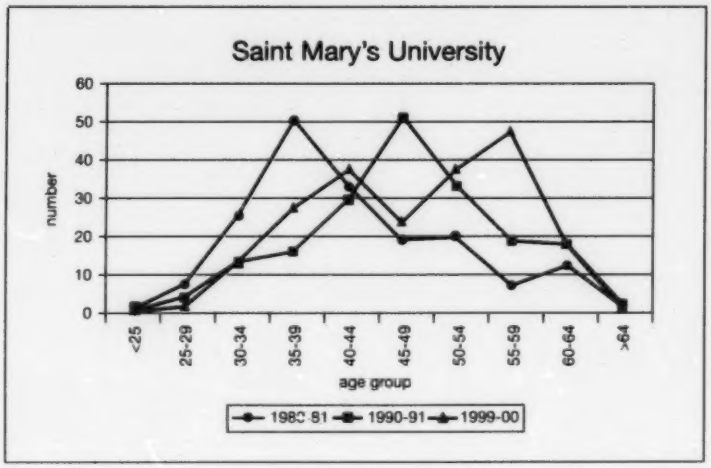
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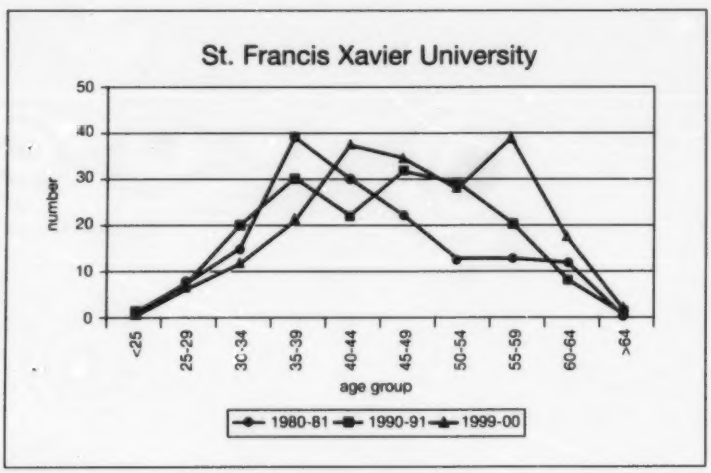
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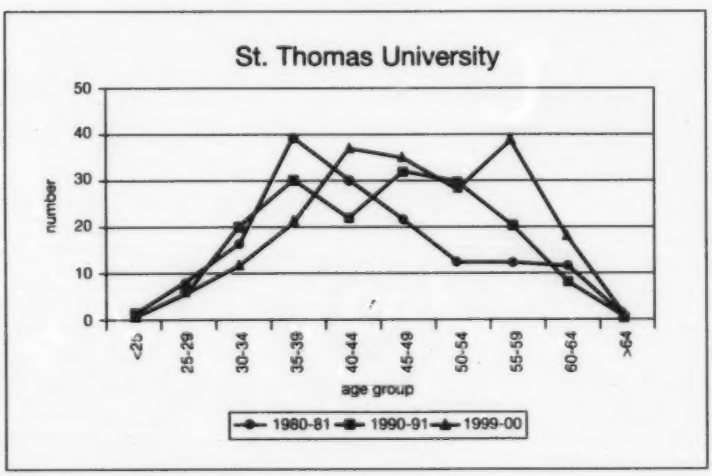
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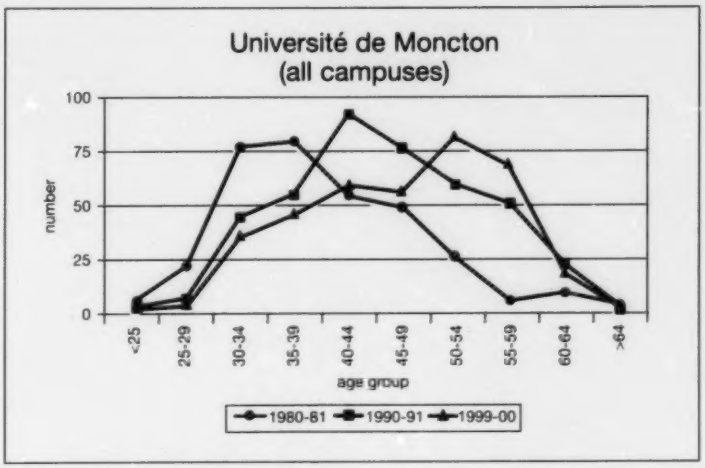
Université de Moncton
(all campuses)
number
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75
50
25
0
<25
25-29
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45-49
50-54
55-59
60-64
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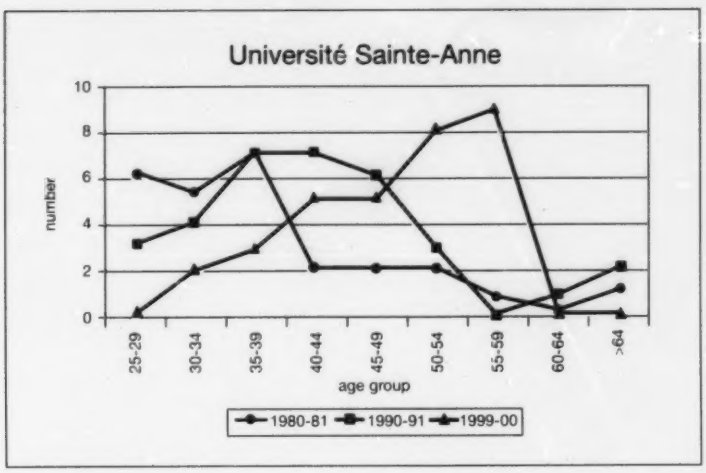
age group
1980-81
1990-91
1999-00


Université Sainte-Anne
number
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8
6
4
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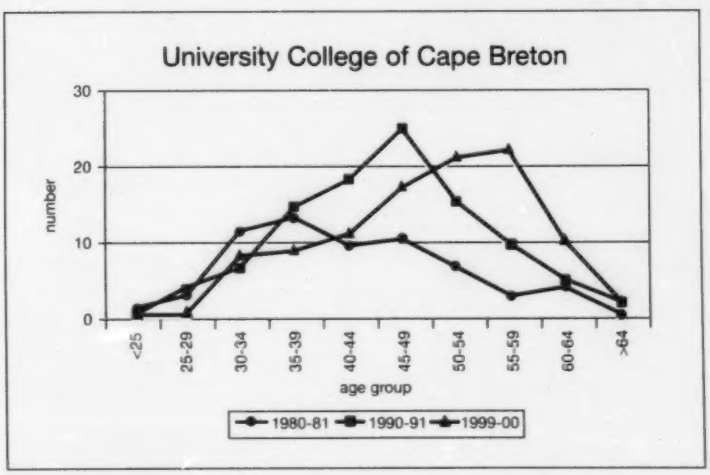
60-64
>64
age group
1980-81
1990-91
1999-00


University College of Cape Breton
number
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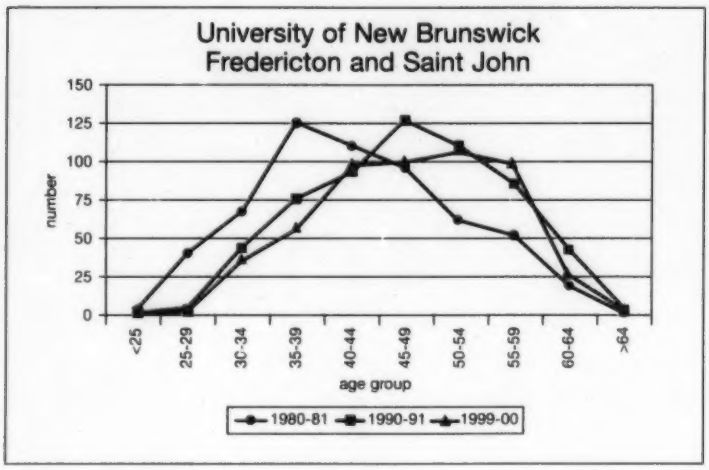
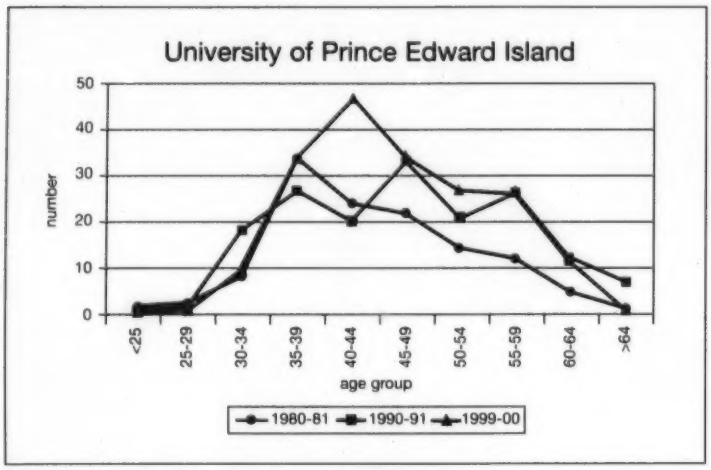
60-64
>64
age group
1980-81
1990-91
1999-00





Note: Number of faculty at Atlantic School of Theology (a) too small to show distribution.

APPENDIX 5: LIST OF MAJOR FIELDS OF STUDY AVAILABLE AT THE DOCTORAL LEVEL BY INSTITUTION (active as of February 5, 2002)

Institution	Major Field of Study Code	Description
Acadia University	32599	Theological Studies (Professional programme, preparation for the ministry) - Other
Dalhousie University	00025	Interdisciplinary
	11820	Secondary Education (General)
	30304	Classics
	30599	Other English Language and/or Literature
	30600	French Language and/or Literature
	30999	History - Other
	32199	Philosophy - Other
	42799	Economics - Other
	44300	Political Science
	44606	Clinical Psychology
	44699	Psychology - Other
	45200	Sociology
	50332	Food Science
	50699	Biochemistry
	50912	Microbiology
	50999	Other Biology
	60600	Chemical Engineering
	60700	Civil Engineering
	60900	Electrical Engineering
	61000	Industrial Engineering
	61100	Mining Engineering
	61200	Mechanical Engineering
	61300	Metallurgical Engineering
	61414	Agricultural/Biological Engineering
	61503	Engineering Mathematics
	70604	Anatomy
	70626	Pharmacology
	70630	Physiology and Biophysics
	70699	Basic Medical Sciences
	71020	Pathology
	72100	Pharmacy
	80699	Computer Science
	81204	Mathematical Statistics
	81299	Other Mathematics
	81599	Chemistry - Other
	81899	Geology - Other
	82403	Atmospheric Science
	82799	Other Oceanography and Water Studies
	83099	Other Physics

Institution	Major Field of Study Code	Description
Saint Mary's University	41299	Commerce, Management, Business Administration, Administrative Studies/Sciences - other
Université de Moncton	13700	Education (General)
	30600	French Language and/or Literature
	44606	Clinical Psychology
	44699	Psychology - Other
University of New Brunswick - Fredericton	13700	Education (General)
	30599	Other English Language and/or Literature
	30999	History - Other
	44699	Psychology - Other
	45200	Sociology
	50999	Other Biology
	60600	Chemical Engineering
	60700	Civil Engineering
	60900	Electrical Engineering
	61200	Mechanical Engineering
	61416	Surveying Engineering
	62010	Forest Management
	62020	Forest Engineering
	62099	Forestry - Other
	80699	Computer Science
	81204	Mathematical Statistics
	81299	Other Mathematics
	81599	Chemistry - Other
	81899	Geology - Other
	83099	Other Physics
University of New Brunswick - Saint John	13700	Education (General)
	44699	Psychology - Other
	45200	Sociology
	50999	Other Biology
	80699	Computer Science
	81299	Other Mathematics
	81599	Chemistry - Other
University of Prince Edward Island	52100	Veterinary Medicine
	52200	Veterinary Sciences